



Alliant Energy + BioForward

Final Report:

Location Benchmarking +
Competitive Positioning

October 10, 2025



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Introduction: Wisconsin's Value Proposition

Introduction

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Alliant Energy, in partnership with BioForward, has engaged Global Location Strategies (GLS) to perform a review of Wisconsin's competitive position in the global biohealth and biopharma landscape, with a particular emphasis on the state's value propositions relevant to business recruitment and expansion.

In our initial work together (Phase 01), we began with a targeted alignment session to ensure this assessment will support both Alliant Energy's and BioForward's priorities. The BioForward team provided GLS with background on their efforts and resources to support GLS research.

In Phase 02, GLS conducted research and desktop analysis of Wisconsin's current ecosystem using both subscription-based and publicly-available resources. The following report summarizes GLS research and findings related to:

- Alliant Energy and Wisconsin Value Proposition
- Biopharma Industry Overview
- Area Ecosystem Overview
- Business Conditions
- Market Intelligence

In Phase 03, GLS benchmarked Wisconsin (and specifically the Madison MSA) against other Metropolitan Statistical Areas in the U.S., with a focus on other established and emerging industry hubs to determine differentiators and gaps.



Wisconsin's Value Proposition

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Wisconsin offers a compelling combination of world-class research, specialized workforce, cost competitiveness, and collaborative industry networks that position it as a leading destination for biopharma investment. From discovery through commercialization, the state provides the essential elements, specifically with its excellent access to talent and relevant academic institutions, growing supply chain, and lower operating costs, required to support high-value, complex biopharma manufacturing projects with lower capital risk.

1. World-Class Research & Innovation Ecosystem

- Anchored by the University of Wisconsin-Madison, a top-tier, globally recognized research institution with globally recognized strengths in biotechnology, chemistry, medical sciences, and computer sciences. The Medical College of Wisconsin is another excellent research institution known for cardiovascular and neuroscience research,
- A network of academic medical centers, research parks, and biotech incubators drives discovery and technology transfer.

2. Specialized Talent Pipeline

- Over 32,000 life sciences professionals employed statewide, with concentrations in biotechnology, pharmaceuticals, and medical device fields.
- A steady flow of graduates from biochemistry, biomedical engineering, computer science, and related programs ensures long-term workforce sustainability.

3. Competitive Business Climate

- Lower operating costs than established industry hubs (Boston, San Francisco, etc.), offering more affordable wages, utilities, and real estate.
- Central U.S. location provides logistical advantages for reaching both coasts and international markets.
- Supportive tax and incentive programs tailored to manufacturing, R&D, and job creation.

4. Collaborative Industry Network

- As Wisconsin's leading life sciences industry association, BioForward leads advocacy efforts, fosters connections among startups, established companies and global leaders, and champions the growth of Wisconsin's biohealth ecosystem.
- Strong partnerships between industry, academia, and government drive workforce development and industry alignment.

5. Quality of Life that Attracts and Retains Value

- Madison consistently ranks among the nation's best places to live, offering a blend of affordability, culture, and natural amenities.
- A strong emphasis on health care, education, and community well-being makes Wisconsin an attractive destination for top-tier scientific and technical talent.



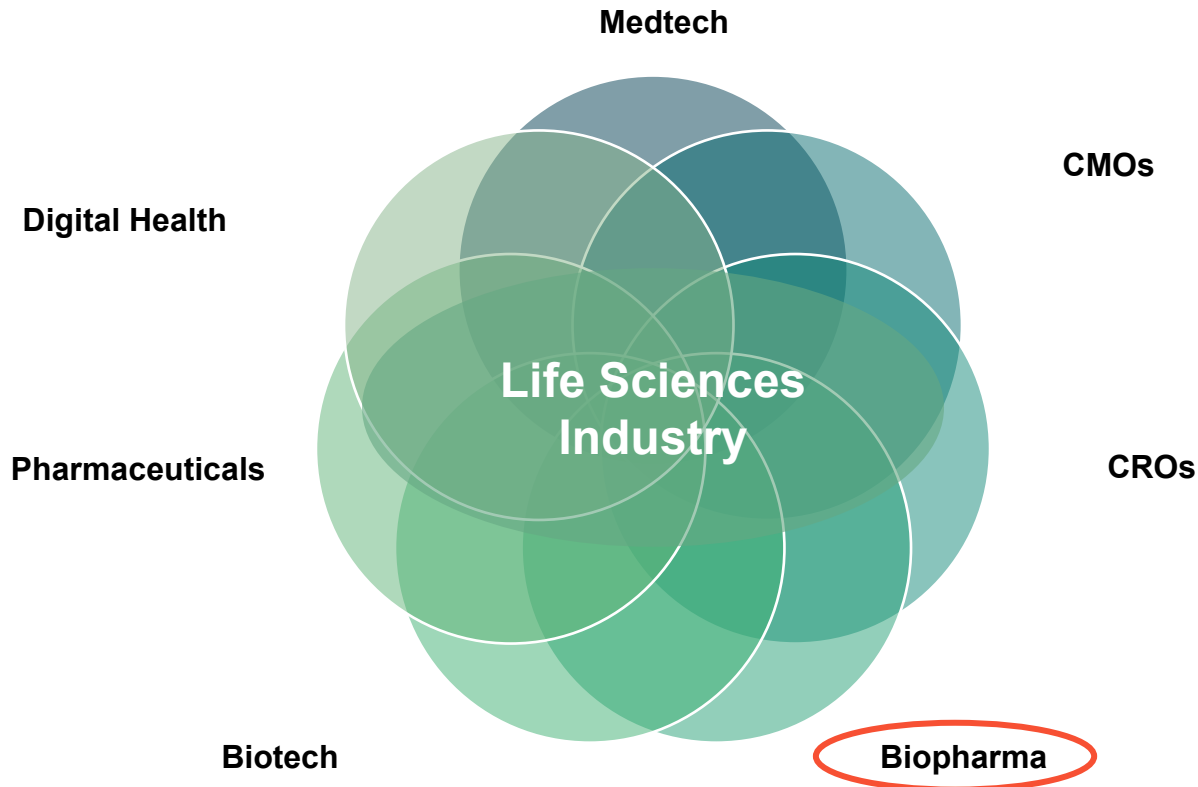
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Executive Summary

Industry Overview

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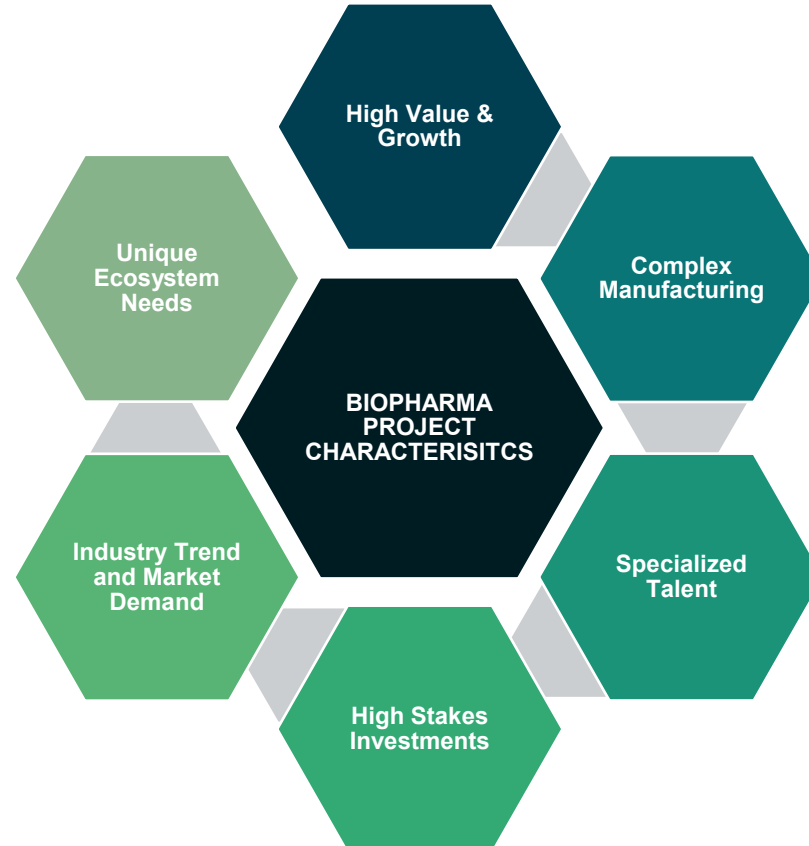
Biopharma manufacturing represents one of the most dynamic and high-value subsectors within the broader Life Sciences industry, combining cutting-edge innovation with large-scale production needs. As companies expand capabilities in biologics, cell and gene therapies, and advanced drug delivery, they require communities that offer specialized talent, resilient infrastructure, and collaborative ecosystems. Wisconsin is uniquely positioned to meet this demand, leveraging its world-class research institutions, growing network of biomanufacturers, and cost-competitive business climate. With the combined leadership of Alliant Energy and BioForward, the state can align its ecosystem and assets to attract and support the next generation of biopharma investment.



Industry Overview

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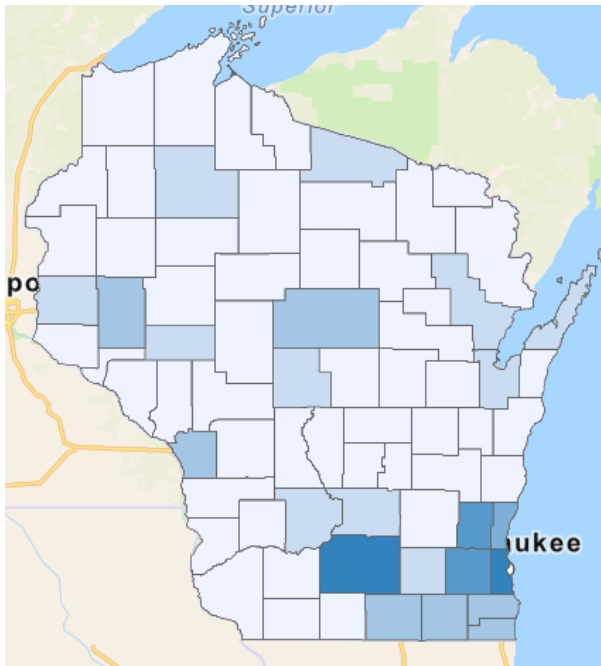
Biopharma projects are defined by their scale, complexity, and reliance on specialized ecosystems. These investments often involve high-value, long-term commitments and advanced manufacturing processes that demand precision, regulatory rigor, and resilient infrastructure. Success depends on access to specialized talent in bioprocessing, engineering, and quality assurance, alongside supportive research institutions and supply chain networks. As industry trends increasingly emphasize biologics, cell and gene therapies, and domestic manufacturing resilience, communities must demonstrate both cost competitiveness and the ability to provide unique ecosystem advantages.



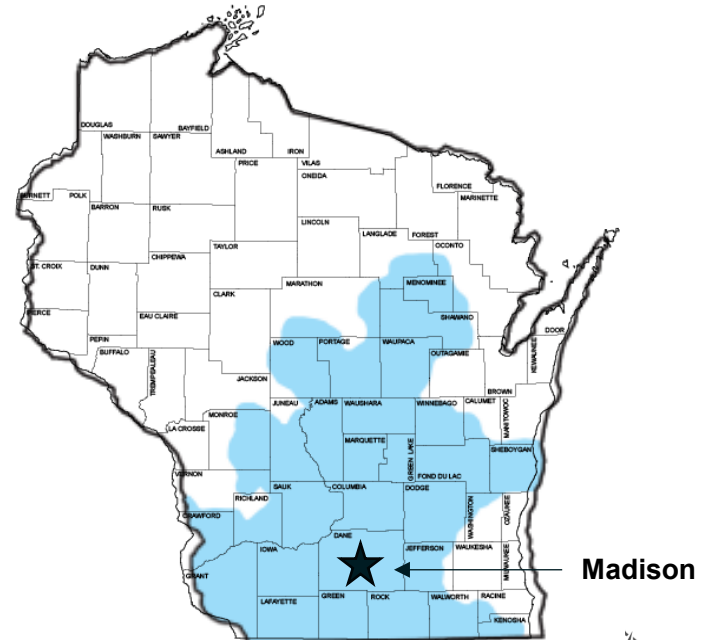
Wisconsin Ecosystem: Alliant Energy

- **Territory & coverage:** Alliant Energy serves large areas around Madison—including Dane County communities such as Verona—adjacent to the City of Madison (which itself is primarily MGE territory). Alliant Energy services 480,000 electric customers and 191,000 gas customers across Wisconsin. The energy provider surrounds the entire Greater Madison MSA.
- **Typical electricity costs (Wisconsin):** Latest EIA data (May/June 2025) show **commercial ~13.3¢/kWh** and **industrial ~8.6¢/kWh** statewide—useful as a planning baseline before tariff/program optimization.

Heat Map of Existing Biopharma Manufacturing Establishments



Overlay of Wisconsin Counties and Alliant Energy Service Territory



Wisconsin Ecosystem: Assets

Ready locations & sites within Alliant territory (in close proximity to Madison)

- **Liberty Business Park (Verona, WI):** Alliant-listed site fronting US-151; ~20–30 minutes to Dane County Regional Airport and directly adjacent to Madison’s west-side biohealth cluster (URP/West Madison). Good fit for pilot MFG, QC, and non-GMP labs needing quick highway access.
- **Alliant “Ready Sites” program:** Matching funds for due-diligence (environmental, geotech, marketing) to accelerate site readiness—useful for life-science GMP buildouts with strict timeline risk.
- **Additional certified/marketed parks within WPL territory:** Examples include 151 Business Park (Beaver Dam), a US-151 corridor site north of Madison; WEDC also lists Beaver Dam Commerce Park as shovel-ready. These broaden options for larger utilities-served footprints while staying within the metro’s labor shed.

Greater South-Central region biohealth infrastructure

- **Lab real estate & density:** The Madison market totals ~4.8M SF across 89 lab buildings with ~2% vacancy (2024–25 snapshot), concentrated on the west side/University Research Park (URP)—a short hop from Verona/US-151 sites.
- **Research anchors:** UW–Madison, Morgridge Institute for Research, Medical College of Wisconsin and Milwaukee School of Engineering (MSOE), and WiCell (national stem-cell bank/cytogenetics) provide IP, core facilities, and translational partners tied to personalized medicine and cell/genetic therapies.
- **Company & startup platform:** University Research Park houses 120+ companies; Forward BIOLABS offers turnkey wet-lab coworking that cuts startup time by 6–9 months—ideal for vendor/supplier footholds and pilot teams.
- **Workforce pipeline:** Statewide Wisconsin Universities with broad scientific, engineering and computer science degrees including UW-Madison and UW MS in Biotech. Statewide technical college system connecting to employers to ensure curriculum meets industry needs (Biotechnology A.A.S, apprenticeship).

Wisconsin Business Conditions

Strategic Location & Logistics

- Centrally located in the U.S.; within a one-day truck haul of 1/3 of the U.S. population.
- Interstate highways, freight rail, and nearby global airports (Chicago O'Hare, Milwaukee, Minneapolis) ensure supply chain efficiency.
- Proximity to major healthcare markets and skilled labor pools.

Stable & Cost-Effective Operating Environment

- Lower exposure to natural disasters → reliable supply chains.
- Competitive operating costs with a business-friendly climate.
- Deep roots in advanced manufacturing reinforce reliability and scalability.

Manufacturing Heritage, Scale, & Emerging Strengths

- 470,000+ workers in manufacturing (1 in 6 jobs statewide).
- \$65B+ annual economic contribution.
- Specialized strengths: machinery, food processing, paper, fabricated metals.
- Emerging strengths: radiopharmaceuticals, medical devices, precision engineering.

Relevance for Biopharma

- Synergies with the region's food and beverage industry, which provides deep expertise in fermentation, quality control, and regulatory compliance—capabilities that are highly relevant to biopharmaceutical manufacturing and innovation.
- Workforce skilled in precision production, chemical engineering, and regulated environments.
- Integrated culture of industrial excellence → scalable, reliable biomanufacturing.
- State concentration in biopharma manufacturing ~3x the national average.

Scale & Impact of Biohealth

- 53,000 employees across 2,200+ companies.
- \$32B annual economic impact; one of Wisconsin's fastest-growing industries.
- Recognized as a **U.S. Biohealth Tech Hub (2023)**.

Geographic Distribution

- Major hubs: Madison, Milwaukee, Pleasant Prairie, Janesville.
- Emerging clusters: Green Bay, LaCrosse, & Eau Claire.
- Proximity to Chicago enhances connectivity and market access.

Wisconsin Differentiators

Category	Wisconsin	Large Coastal Hubs (MA, CA, NY)
Operating Costs	💰 Lower labor, utilities, & real estate costs → more efficient scaling	💰💰💰 High costs, limited affordable space
Cluster Strength	Madison's biohealth concentration ~2x national avg and anchored by companies like Exact Sciences, Promega, Millipore Sigma, PPD Thermo-Fisher	Dense but saturated clusters; competition for talent/resources
Research Powerhouse	UW–Madison: top NIH-funded public university that's strong in genomics, stem cells, oncology, theranostics	Top-tier research universities but oversubscribed talent pools
Manufacturing & Scale-up	Integrated R&D + biomanufacturing (Catalent, Pfizer, Eurofins) in-state	Often rely on out-of-state/overseas for scale-up
Federal Recognition	EDA Tech Hub designation + \$49M for personalized medicine	Only a few states recognized nationally
Workforce Pipeline	Apprenticeships, biohealth career pathways, technical colleges, high retention, supported by: • Strong regional university systems (e.g., University of Wisconsin campuses, University of Minnesota, University of Iowa) • Access to a steady pipeline of graduates trained in biotech, engineering, and health sciences • Collaborative workforce development initiatives across state lines	Strong pipelines but higher turnover, transience in labor force
Location & Logistics	Midwest hub with access to Chicago O'Hare and interstate freight. Proximity to major talent pools in Chicago, Minnesota, and Eastern Iowa, all with deep life science and tech workforces	Global access, but congestion & higher logistics costs
Business Climate	Stable, collaborative partnerships (WEDC, WARF, universities, industry)	Competitive but fragmented; policy uncertainty in some regions



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Market and Industry Overview

Biopharma Industry Overview

The biopharmaceutical industry comprises companies focused on researching, developing, manufacturing, and distributing drugs—products intended for diagnosing, treating, curing, preventing disease, or impacting the body's structure or function (excluding food). This includes active pharmaceutical ingredients (APIs) and excipients (inactive substances that serve as a vehicle for a drug or API). Key subsectors of the industry include:

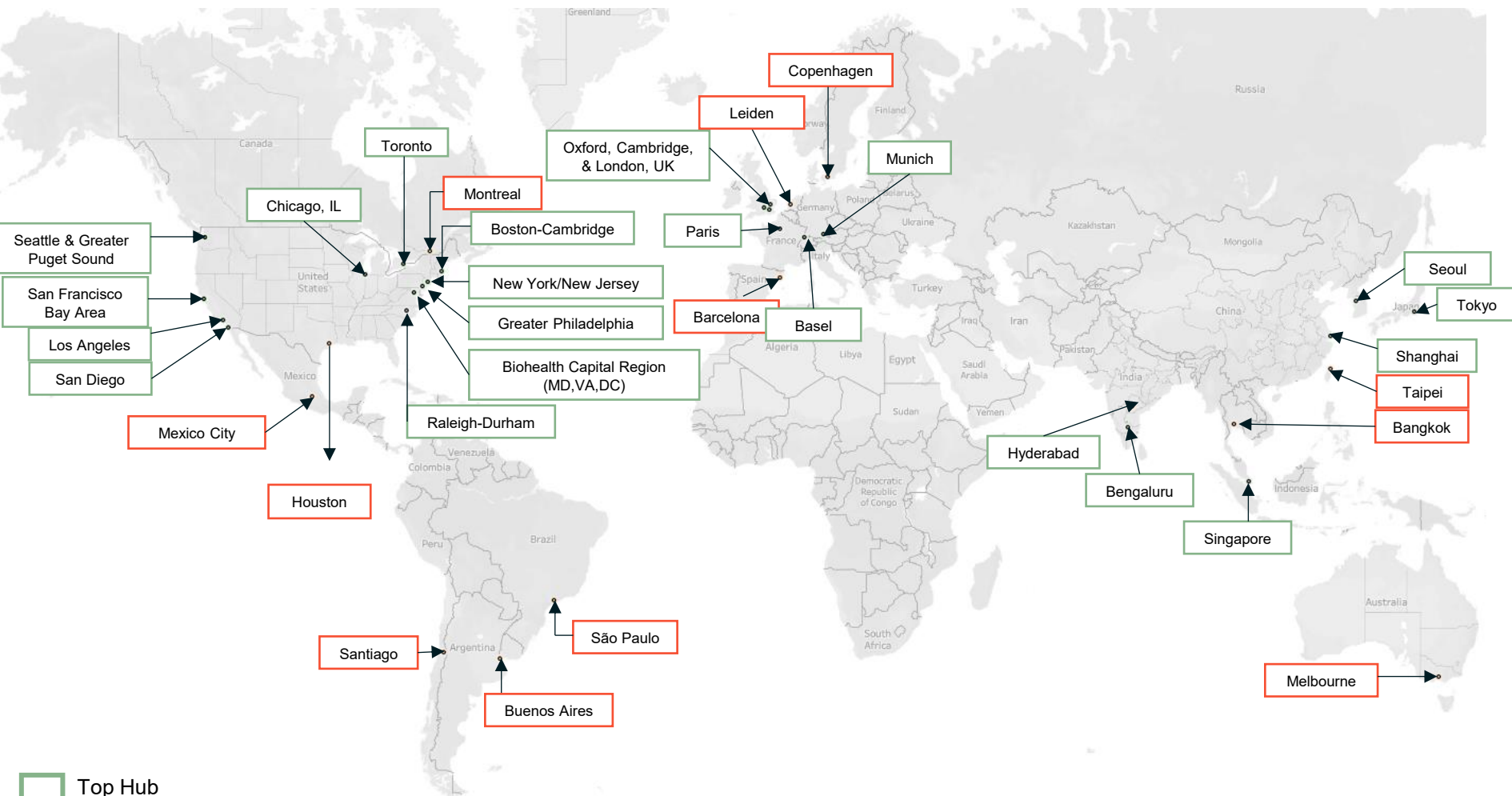
- **Small Molecules (chemicals):**
 - Traditional, chemically synthesized drugs with a well-defined structure
 - Includes innovative/originator pharmaceuticals (protected by patents and exclusivity) and generic pharmaceuticals (bioequivalent copies marketed after exclusivity or patent expiry).
 - Examples: Aspirin, Lipitor, Prozac, etc.
- **Large Molecules (biologics):**
 - Complex therapies derived from living organisms (human, animal, plant, or microorganism).
 - Includes vaccines, monoclonal antibodies, therapeutic proteins, blood products, tissues, and gene therapies (CRISPR-enabled gene editing, advanced cell-based approaches, etc.).
 - Precision medicine, CRISPR, and regenerative therapies represent frontier growth, though gene therapy funding has seen volatility.
 - Examples: Humira, COVID-19 vaccines, CRISPR-based therapies, etc.
- **Active Pharmaceutical Ingredients (APIs):**
 - Biologically active components of drug products, whether small or large molecule.
 - Central to global supply chains, manufacturing competitiveness, and healthcare resilience.
 - Strategic growth segment as governments prioritize domestic supply chain security.
 - Examples: Paracetamol/acetaminophen, Amoxicillin API, Insulin API, etc.

Biologics and API Manufacturing represent the strongest growth and reshoring opportunities where Wisconsin is well-positioned.

Biopharma Industry Overview

World Biopharma Clusters

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Biopharma Industry Overview

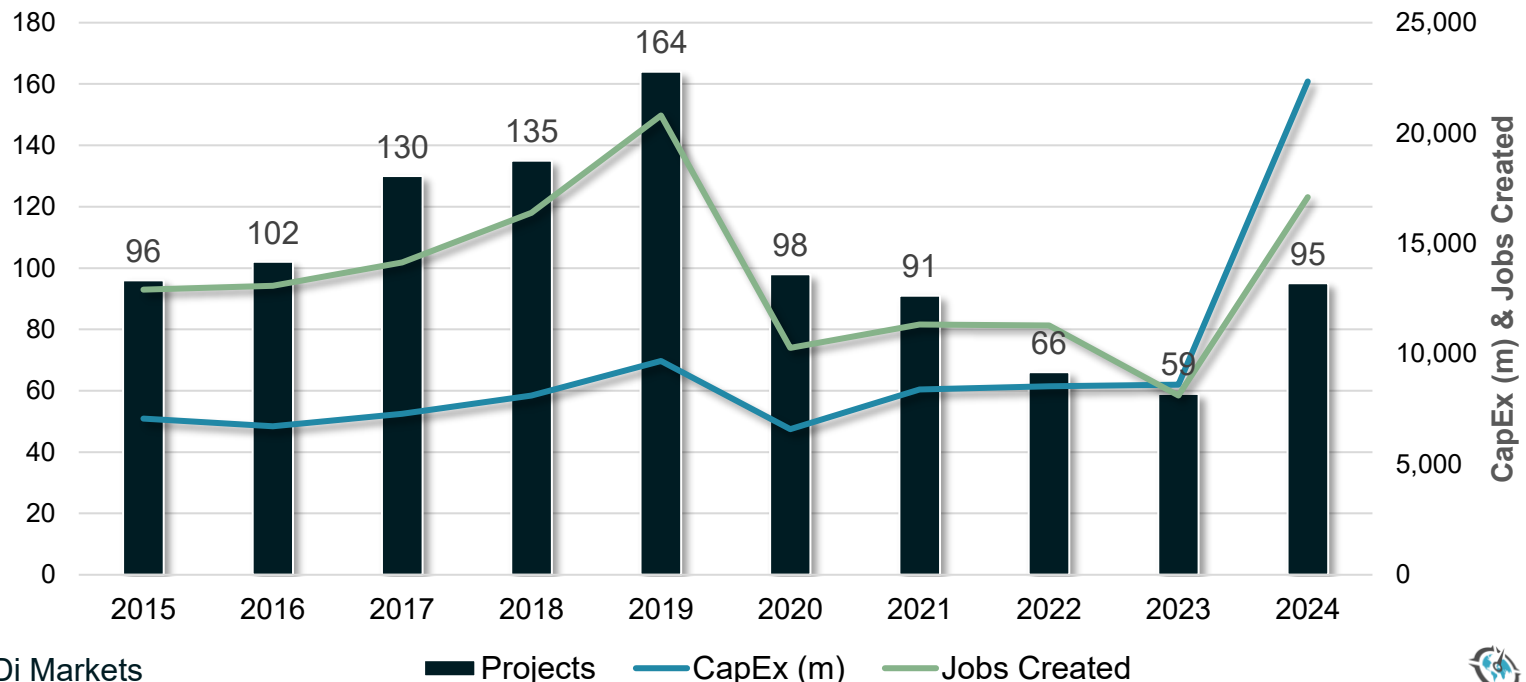
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The global biopharma industry experienced strong project and job growth from 2015–2019, peaking in 2019 with over 160 projects and 20,000 jobs created. The pandemic years (2020–2022) saw a sharp drop in project numbers, though capital investment levels remained steady, reflecting a shift toward fewer but larger, more strategic projects.

By 2024, the sector rebounded in scale, with capital expenditure surging to record levels (over \$22B) and job creation rebounding, signaling renewed expansion and confidence in the industry. Numerous pharmaceutical companies announced significant investments in new manufacturing plants across Asia, Europe, and the U.S., indicating a worldwide expansion drive.

Companies are investing in fewer but larger projects—an opportunity for cost-effective Midwest regions like Wisconsin.

Global Biopharma Manufacturing Projects



Source: fDi Markets

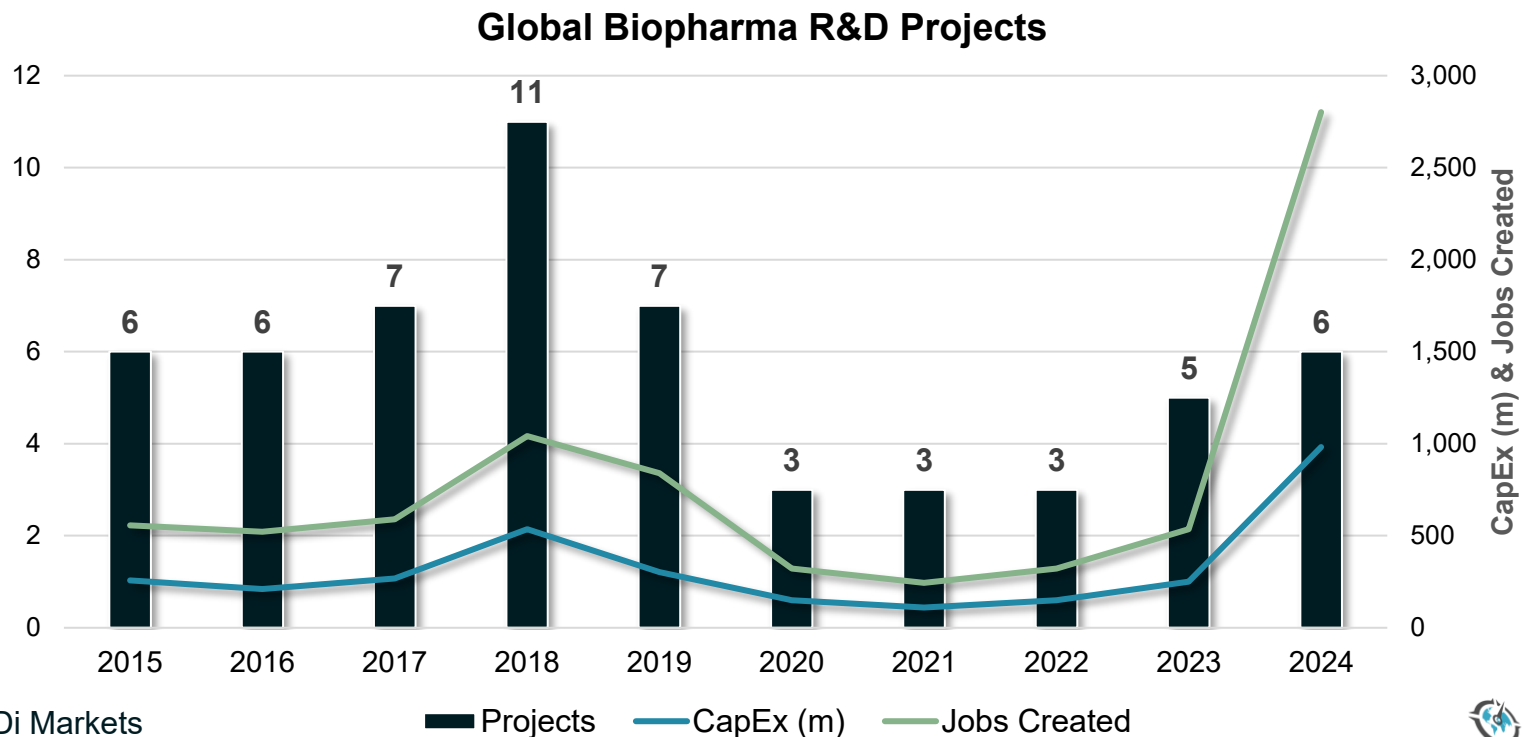
Biopharma Industry Overview

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The global biopharma R&D industry saw steady growth from 2015–2019, peaking in 2018 with 11 projects and over 1,000 jobs created. However, the pandemic years (2020–2022) triggered a sharp slowdown in new R&D site development, with projects dropping to just 3 annually and job creation falling to under 350.

By 2024, the sector rebounded dramatically, with capital expenditures surging to nearly \$1B and jobs created spiking to over 2,800—indicating renewed confidence in scaling research capacity.

This rebound reflects a shift toward larger, higher-value R&D projects, with companies prioritizing scale, advanced infrastructure, and strong talent ecosystems when selecting new locations.

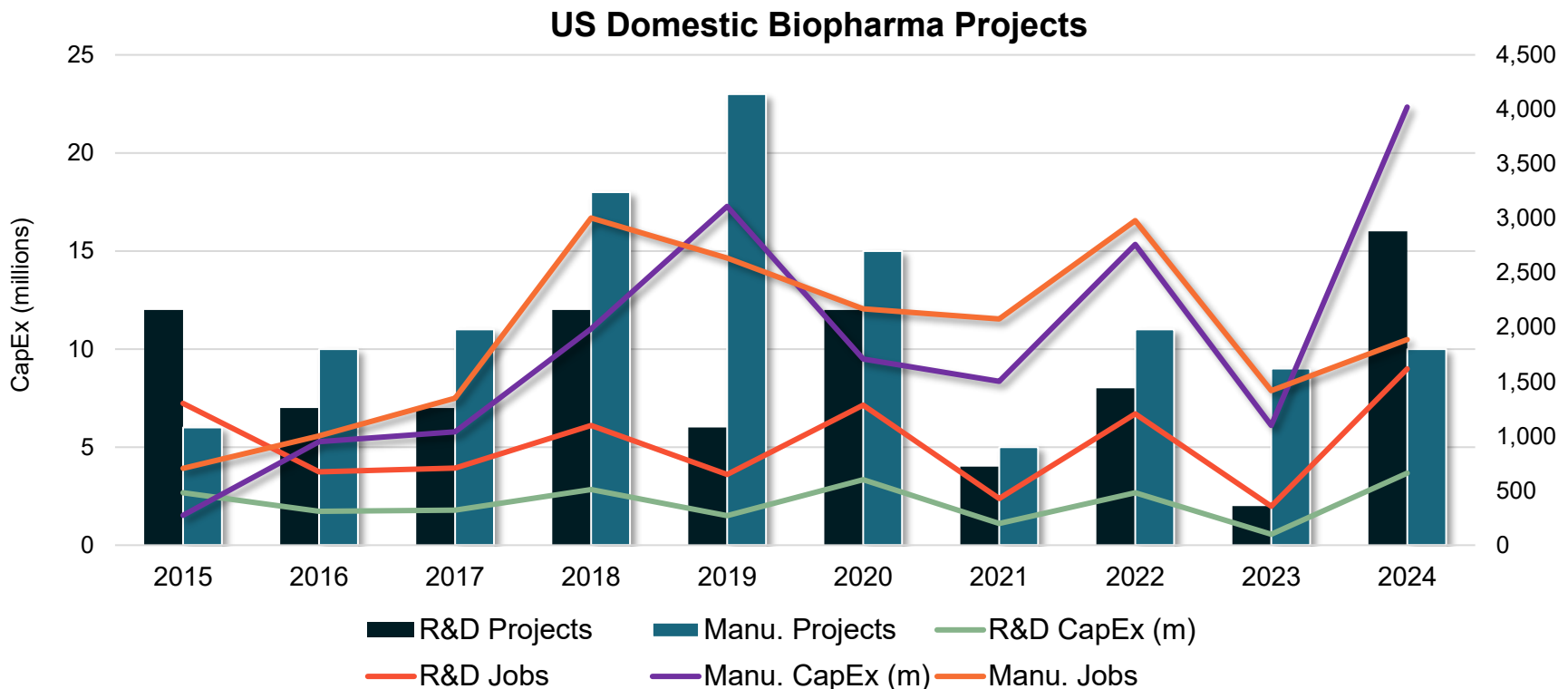


Biopharma Industry Overview

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In the U.S., biopharma R&D activity was steady through 2018 but slowed sharply during the pandemic, bottoming out in 2023 before rebounding in 2024 with record projects, \$661M in CapEx, and over 1,600 jobs. Manufacturing followed a different path—peaking in projects and jobs in 2019, then shifting toward fewer but much larger facilities, culminating in \$4B of CapEx in 2024.

These trends show a clear pivot toward scale and high-value infrastructure, with companies consolidating investment into larger, more sophisticated sites.

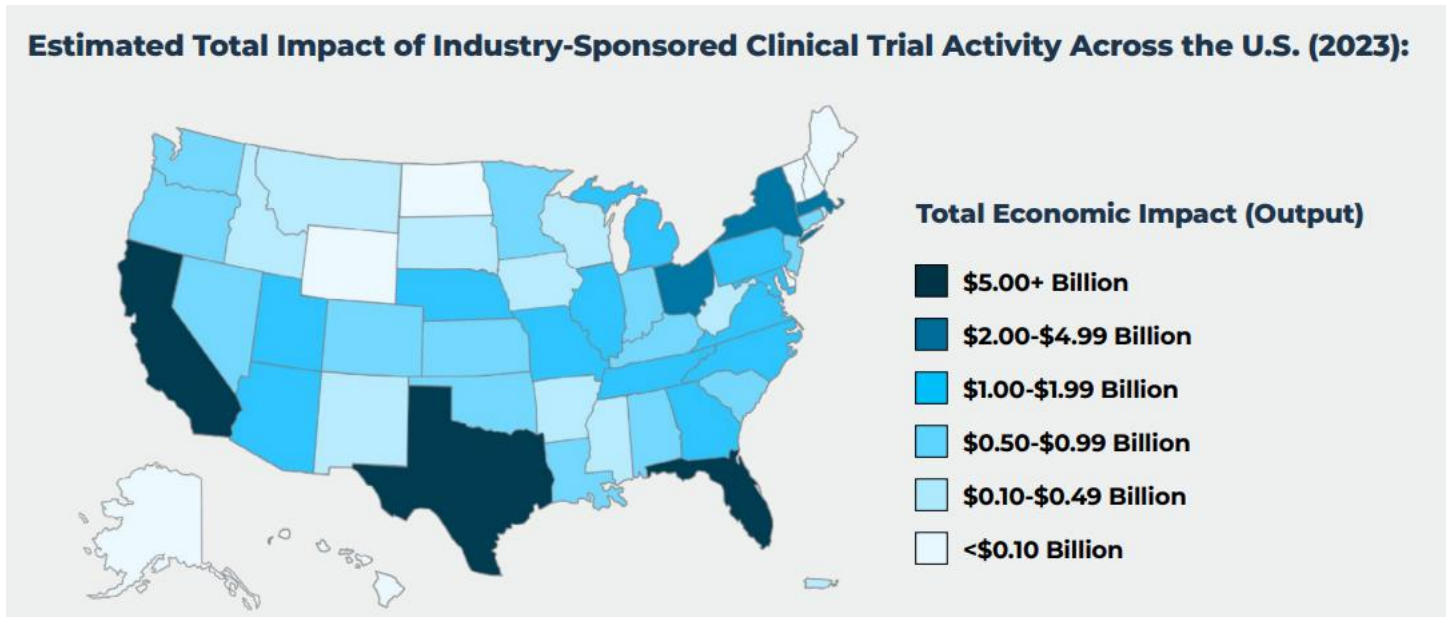


Biopharma Industry Overview

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In 2023, there was a total of 5,288 clinical trials in biopharmaceuticals within the United States and its territories. In these trials, there were over 900,000 participants and had a total economic impact of \$62.6B. Of this total impact, Wisconsin received \$418.8M from 463 active clinical trials.

Wisconsin has some strengths within biopharma clinical trials that set it apart from competition. For example, the University of Wisconsin School of Medicine and Public Health and the Medical College of Wisconsin together support hundreds of active clinical trials, including in cancer research, advancing treatments that reach patients across Wisconsin and beyond. Additionally, clinical trials in Wisconsin support more than 51,000 jobs statewide, spanning roles from scientists and clinicians to administrative staff and infrastructure support.



Biopharma Industry Overview

In a 2024 report detailing top life sciences markets, New York took the top overall spot based on R&D, manufacturing, and medtech criteria. New York was followed by Boston (which led specifically for R&D), Chicago, Houston, and San Francisco Bay Area. Overall, this report found that:

- **Labor demand is resilient despite slower growth:** Though growth is just 0.2% since mid-2022, compared to 15.8% previously, demand for skilled life sciences labor remains robust, with sector unemployment under 2%.
- **Current cooling is cyclical:** While vacancy and cooling job growth reflect temporary capital constraints and overbuilt inventory, the high-value nature of life sciences—especially in manufacturing—suggests this is a cyclical adjustment, not a terminal decline.
- **Overheated hubs create opportunity for emerging markets:** Established hubs, like Boston, San Francisco, New York, may offer attractive real estate conditions now, but new or ‘emerging’ markets, like Madison, are gaining traction. These could appeal to firms seeking cost-effective scale-up or diversification beyond established market saturation points.

Top Life Science Markets	
Rank	Market
1	New York/New Jersey
2	Boston/Cambridge
3	Chicago
4	Houston
5	San Francisco
6	LA/Orange County
7	Philadelphia
8	San Diego
9	Washington, D.C./Baltimore
10	Dallas/Fort Worth

Biopharma Industry Overview

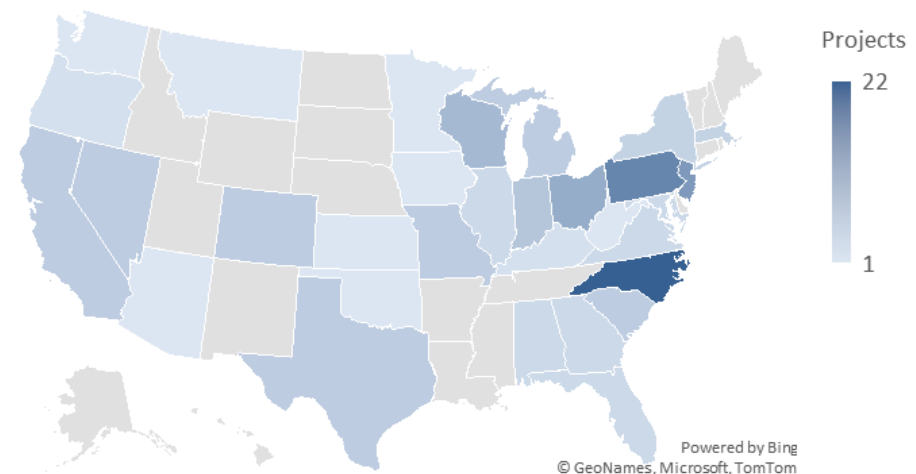
Outside the U.S., leading biopharma clusters have emerged as global innovation and manufacturing hubs, supported by strong government investment, academic excellence, and multinational presence. From Europe's established centers to Asia's rapidly scaling ecosystems, these regions are shaping the competitive landscape and influencing where global players expand operations.

- **Europe (Switzerland, Germany, UK, France):** Strong global hubs with concentration in biologics, vaccines, and R&D. Switzerland (Basel) is home to Novartis and Roche; Germany focuses on biomanufacturing and clinical trials; the UK has strengths in cell and gene therapy.
- **Ireland:** Leading in pharmaceutical manufacturing and APIs, supported by favorable tax policies and deep multinational investment (Pfizer, Eli Lilly, MSD). France also boasts an incredible ecosystem for biopharma, perpetuated by its biopharma technology park, BIOPARK, in the south of the country. Finally, the BioValley, which is located in France, Switzerland, and Germany, is a top European biotech region known for its highly successful life science and biotechnology developments.
- **Asia (Singapore, South Korea, China):** Singapore is a biopharma manufacturing hub with strong government incentives; South Korea emphasizes biologics and biosimilars (Samsung Biologics, Celltrion); China is rapidly expanding in R&D and clinical trials, though facing IP and regulatory scrutiny.
- **Canada:** Growing cluster in Toronto-Montreal corridor, with focus on biologics, oncology, and vaccines, supported by strong research universities and government funding.
- **Nordics (Sweden, Denmark):** Specialized in biologics and diabetes care (Novo Nordisk, AstraZeneca) with emphasis on innovation and integration with healthcare systems.

Where are Expansions Happening Now?

- **Investment concentrated in established hubs.** North Carolina (Durham, Clayton, Wilson) attracted over \$5.3B in capital, led by Clayton's single megaproject. New Jersey (East Windsor, Boonton) and Pennsylvania (Philadelphia, Allentown, Conshohocken, Macungie) also recorded multi-hundred-million-dollar projects, while Colorado (Boulder) continues to grow as a secondary cluster. These regions benefit from mature biomanufacturing ecosystems, strong workforce pipelines, and proximity to leading R&D centers.
- **Industry remains highly capital-intensive.** Clayton, NC alone accounted for a \$5.3B expansion supporting nearly 1,700 jobs (~\$3.1M per job). East Windsor, NJ shows a smaller but still heavy ratio at ~\$739K per job. Such figures underscore the infrastructure-heavy nature of biologics and advanced therapy manufacturing.
- **Projects show strong employment impact alongside investment.** Most hubs demonstrate tens to hundreds of jobs per project, reinforcing biopharma's dual role in driving both infrastructure development and high-skilled labor demand.

Geographic Concentration of Pharmaceutical Manufacturing, 2015-2024

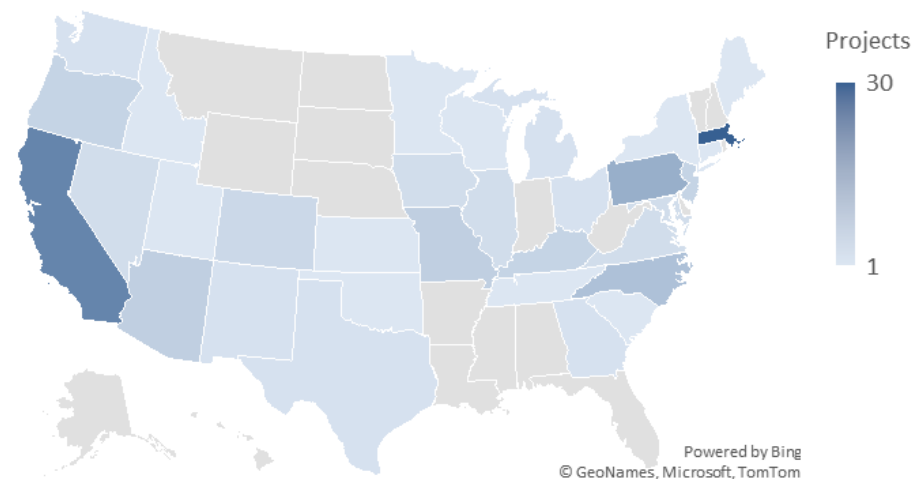


Where are Expansions Happening Now?

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- **Capital intensity remains high.** Massachusetts (\$1.45B, 3,017 jobs) and California (\$1.09B, 2,405 jobs) lead, with Pennsylvania (\$545M, 1,206 jobs) also showing strong momentum. Investment is anchored in cities like Cambridge (14 projects), San Diego (8), and Boston (6), reflecting the dominance of established R&D and manufacturing hubs.
- **Employment impact is significant.** Projects consistently generate hundreds of jobs, with Ohio's \$255M investment supporting 605 jobs and Kentucky's \$207M creating 664. Concentration in locations like Durham (6 projects), St. Louis (3), and Denver (3) underscores the strong link between capital deployment and skilled job growth.
- **Clusters extend beyond traditional hubs.** Secondary cities such as Portland, Richmond, Rockville, and Lawrenceville, GA are attracting multi-project activity, while single-project investments stretch into emerging regions from Albuquerque to Knoxville. This spread highlights the growing geographic footprint of U.S. biomanufacturing beyond its coastal anchors.

Geographic Concentration of R&D Projects, 2015-2024



Active Domestic Biopharma Players

Eli Lilly leads with over \$5B CapEx and 2,000+ jobs, while Merck & Co. and Pfizer also drive large-scale U.S. expansion. Mid-tier players like Catalent Pharma and Charles River show strong momentum, particularly in R&D and specialized services, while emerging groups such as Kaycha are creating significant job growth with high project counts. Overall, the U.S. market reflects both large-scale pharmaceutical commitments and a growing ecosystem of specialized and contract players.

Top US Companies by CapEx, 2015-2025

Parent company	CapEx (millions)	Jobs created	Projects
Eli Lilly	32,660	5,102	8
Merck & Co	3,360	1,853	13
Pfizer	2,170	1,629	9
Kaycha Group	1,200	2,568	24
Catalent Pharma	949	2,340	13
McKesson	541	2,887	8
Thermo Fisher Scientific	517	1,051	7
Amneal Pharmaceuticals	484	630	3
Zoetis	425	648	7
Charles River	416	1,106	6

What does this mean for Wisconsin?

- **Attract spillover investment:** As large firms expand manufacturing and R&D, Wisconsin can position itself as a cost-effective alternative to Tier 1 hubs.
- **Specialized niche opportunities:** Growth in contract research and development (e.g., Catalent, Charles River) aligns with Wisconsin's academic and research strengths. Additionally, growth in US projects strengthens Wisconsin's leadership in radiopharmaceuticals by expanding demand for its research, production, and clinical expertise.
- **Job creation potential:** With investments increasingly linked to R&D and clinical operations, Wisconsin can capture high-skill job growth by leveraging its talent pipeline and university system.

Active Global Biopharma Players

Novo Nordisk (Denmark) leads global biopharma investment with over \$8B in capital expenditure and 5,000+ jobs created, far surpassing peers such as GlaxoSmithKline (UK) and Aurobindo Pharma (India). Germany also shows strong activity, with major contributions from Fresenius, B. Braun Melsungen, and Boehringer Ingelheim, underscoring its established manufacturing base. For the U.S., this rising global competition highlights the need to strengthen domestic biopharma ecosystems to capture future investment and sustain growth.

Top Global Companies by CapEx, 2015-2025

Parent company	Country	CapEx (millions)	Jobs created	Projects
Novo Nordisk	Denmark	8,240	5,775	12
GlaxoSmithKline	United Kingdom	1,210	990	8
Aurobindo Pharma	India	1,137	1,986	8
Roche Group	Switzerland	1,080	1,703	11
Hikma Pharmaceuticals	United Kingdom	1,050	1,285	5
Corden Pharma	Luxembourg	698	457	4
Sanofi	France	687	588	4
Chemesis International	Canada	641	938	7
Kyowa Hakko Kirin	Japan	1,060	204	2
Fresenius	Germany	473	778	5

What does this mean for Wisconsin?

- **Leveraging job efficiency:** Wisconsin's high jobs-to-capex efficiency (e.g., Menomonie: \$2.5M → 199 jobs) positions it as attractive for labor-intensive operations like packaging, fill-finish, and distribution.
- **Prioritizing the right players:** Target opportunities lie with global CDMOs (i.e., Corden Pharma) and generic/API players (Aurobindo), who value workforce availability and cost competitiveness.
- **For high-capex biologics plants:** (e.g., Novo Nordisk scale), Wisconsin will need state-level incentives, workforce pipelines, and site-readiness comparable to North Carolina or New Jersey.

Domestic v. Foreign Investment

Domestic projects dominate in volume, though they tend to have a lower average capital expenditure of around \$39M per project. In contrast, foreign projects are fewer but involve larger investments, averaging approximately \$59M per project. Despite these differences, jobs created are comparable—about 1,150 for domestic projects and 1,000 for foreign—indicating that foreign investors commit more capital per job.

Wisconsin can leverage its strong domestic base by supporting incremental expansions and strengthening supply chain linkages of U.S. firms. At the same time, the state should focus on attracting foreign entrants by marketing its central location and skilled workforce to secure high-capital, anchor investments.

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Roche Group	Switzerland	1,080	1,703	11
Hikma Pharmaceuticals	United Kingdom	1,050	1,285	5
Corden Pharma	Luxembourg	698	457	4
Sanofi	France	687	588	4
Chemesis International	Canada	641	938	7
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Wisconsin Ecosystem

Wisconsin Ecosystem

Wisconsin: At the Center of the U.S. Market

Wisconsin's central location provides unmatched access to major markets, supply chains, and talent across the Midwest and beyond.

Strategic Location

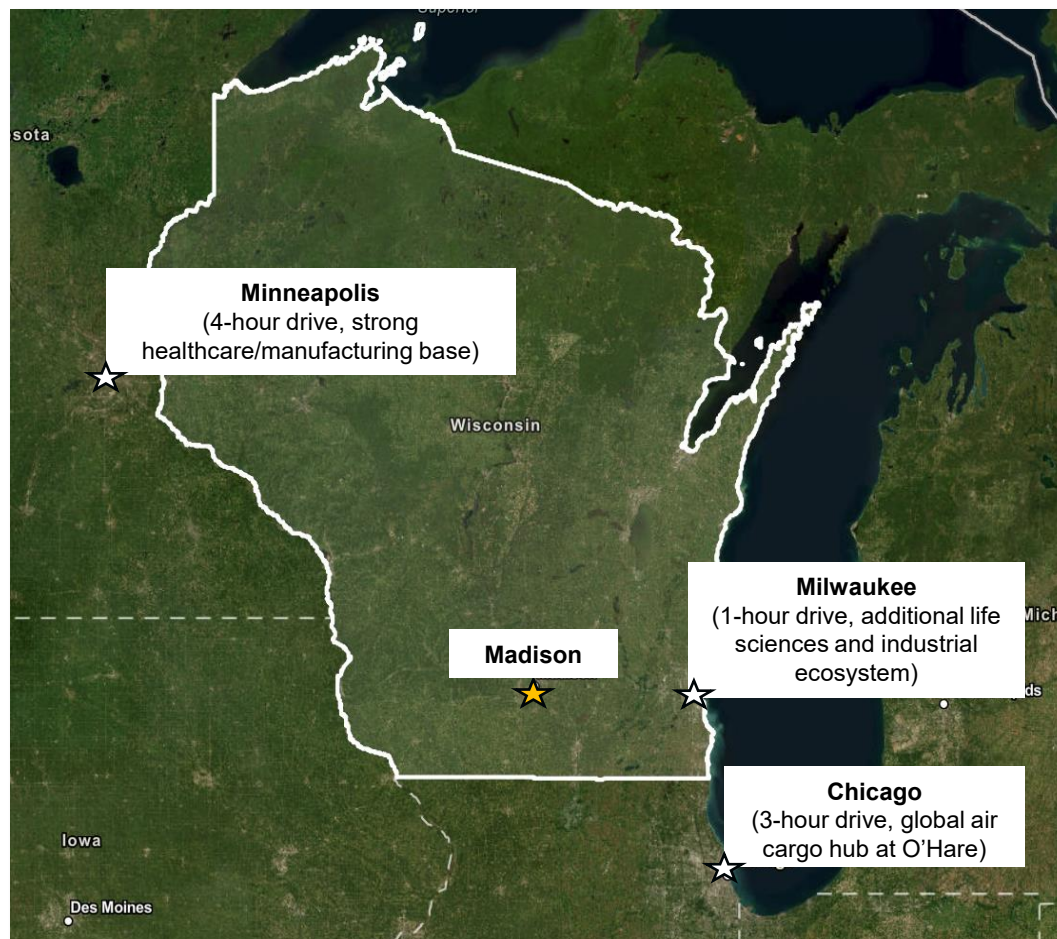
- Centrally located in the U.S., with direct access to both coasts.
- Within a one-day truck haul of one-third of the U.S. population.
- Home to reliable logistics infrastructure: interstate highways, freight rail, and nearby global airports.

Proximity to Major Markets

- Chicago: With 59,000 employees and \$1.9B in VC funding over the last 5 years, Chicago is a large asset for the Madison MSA to draw on for talent. Also, ORD is one of the world's busiest air cargo hubs.
- Minneapolis: Located adjacent to the Mayo Clinic (and its 51,000 workers, it reinforce access to skilled labor pools and strong healthcare markets.

Stable & Resilient Operating Environment

- Less exposed to natural disasters (hurricanes, wildfires, earthquakes), supporting supply chain reliability.
- Cost-effective, business-friendly environment with deep roots in advanced manufacturing.



Wisconsin Ecosystem

Wisconsin: Strong Local Supply, Regional Reach

Chicago MSA: Huge output, but competition is fierce — grads are pulled into pharma, healthcare, consulting, finance, and tech. Opportunity to flow into Wisconsin with there's targeted recruitment.

Minneapolis MSA: Strong STEM pipeline, especially aligned with med tech and health sciences. Potential to attract talent if Madison markets itself as a complementary hub with lower costs and strong research ties.

Madison MSA: This is significant for a metro Madison's size. It shows UW–Madison and other institutions generate a deep pool of science graduates, fueling local biohealth growth. It also means Madison isn't solely reliant on in-migration — it produces its own pipeline.

Milwaukee MSA: Smaller output, but close enough to feed Madison's talent pool if companies make regional connections.

Iowa: University of Iowa and Iowa State are short drives from Southern Wisconsin and offer a large graduate pool to pull from

Implications for Wisconsin's Labor Shed:

1. **Self-Sustaining Talent Engine:** Madison already produces a large volume of science grads relative to its size — nearly double Milwaukee's, despite being a smaller metro. This supports its growing biohealth concentration without depending entirely on external inflows.
2. **Regional Talent Attraction:** Chicago and Minneapolis together produce 17,600+ grads annually — a massive regional pool. Madison can attract a share of these by emphasizing its collaborative ecosystem, lower cost of living, and cutting-edge biomanufacturing opportunities.
3. **Competitive Positioning:** Chicago dominates in raw numbers but also in competition. Madison's smaller, high-density cluster can pitch itself as a place where young scientists have faster career acceleration and direct ties to major research institutions (UW–Madison, WARF).
4. **Pipeline Strategy:** To keep pace with industry growth, Madison must combine local retention (keeping UW–Madison grads) with regional recruitment (targeting Minneapolis and Chicago grads). Workforce programs like Actualizing Biohealth Career Pathways position Madison well for inclusion and broadening access.

MSA	Awards in Life & Physical Sciences
Chicago-Naperville-Elgin, IL-IN	11,140
Minneapolis-St. Paul-Bloomington, MN-WI	6,460
Madison, WI	4,153
Milwaukee-Waukesha, WI	2,171
Ames, IA	2,118
Iowa City, IA	1,765

Wisconsin Ecosystem

ALLIANT ENERGY
+ BIOFORWARD

Wisconsin: A National Leader in Manufacturing

Wisconsin's deep-rooted manufacturing strength provides the foundation for advanced industries like life sciences and biopharma.

Manufacturing Heritage & Scale

- Wisconsin ranks consistently among the top states for manufacturing employment and GDP share.
- Over 470,000 workers employed in manufacturing, representing nearly 1 in 6 jobs statewide (JobsEQ).
- Manufacturing contributes more than \$65 billion annually to Wisconsin's economy.

Specialized Strengths

- Leadership in machinery, food processing, paper, and fabricated metals.
- Advanced sectors emerging in radiopharmaceuticals, medical devices, and precision engineering.
- Strong supply chain ecosystem supporting high-value production.
- Wisconsin has no property tax on machinery and equipment, which is often a large financial burden for CapEx heavy industries

Why This Matters for Biopharma

- Skilled workforce experienced in precision production, quality systems, and regulated environments.
- Established culture of industrial excellence ensures reliability and scalability.
- Foundation of manufacturing capability positions Wisconsin to excel in complex biopharma manufacturing logistics.



Wisconsin Ecosystem

Wisconsin's Life Sciences Ecosystem

Wisconsin's diverse life sciences industry spans biopharma, medtech, digital health, and advanced research—generating billions in economic impact and employing tens of thousands across the state.

Scale & Impact

- More than 53,000 employees across 2,200+ companies statewide.
- Annual economic impact of \$32 billion, making it one of Wisconsin's fastest-growing industries.

Geographic Distribution

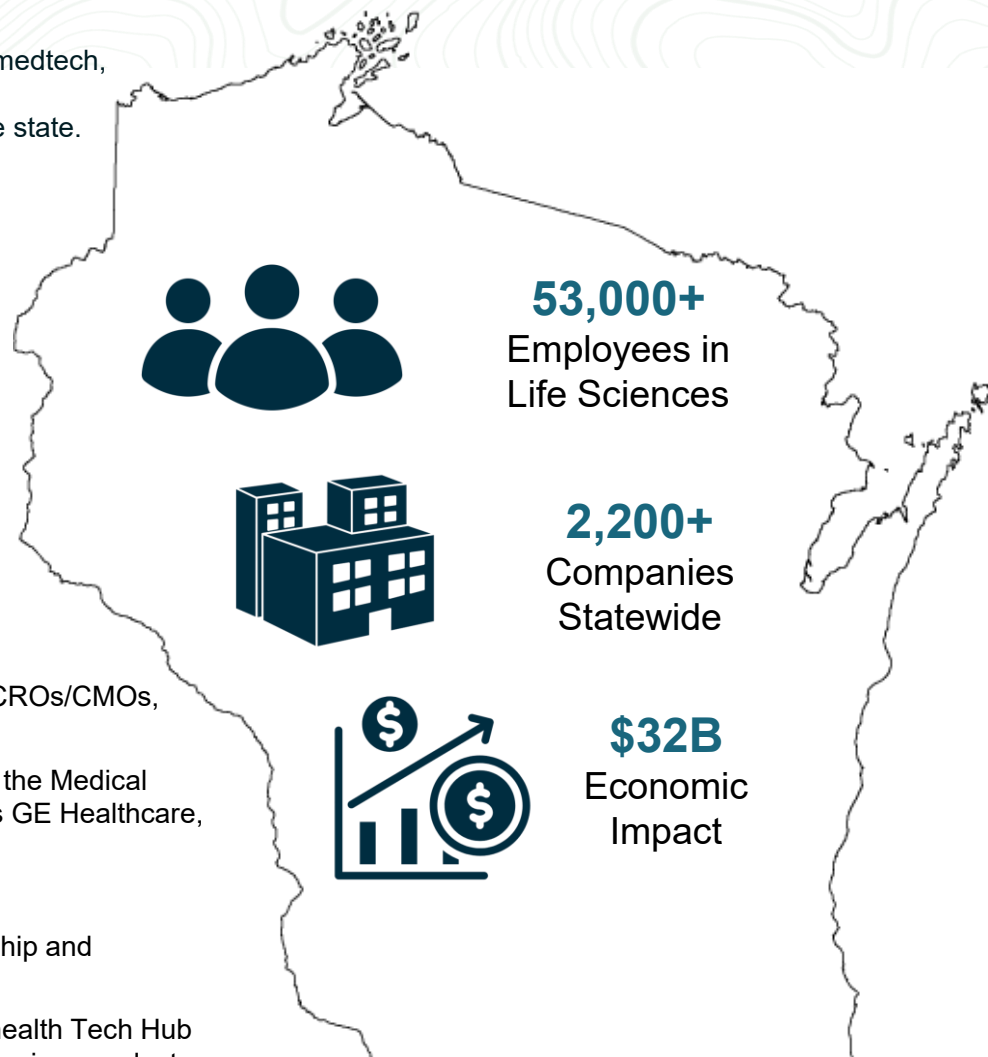
- Activity concentrated in Madison, Milwaukee, Pleasant Prairie, and Janesville, with emerging clusters in Green Bay and Wausau.
- Proximity to Chicago enhances supply chain efficiency and market access.

Industry Breadth

- Strong presence in biopharma, biotech, medical devices, CROs/CMOs, and digital health.
- Anchored by world-class institutions like UW-Madison and the Medical College of Wisconsin, alongside global companies such as GE Healthcare, EPIC Systems, and Exact Sciences.

Collaboration & Momentum

- BioForward Wisconsin provides statewide industry leadership and collaboration.
- Federal Recognition: Wisconsin designated as a U.S. Biohealth Tech Hub in 2023, reinforcing its status as a nationally significant life sciences cluster.



Wisconsin Ecosystem

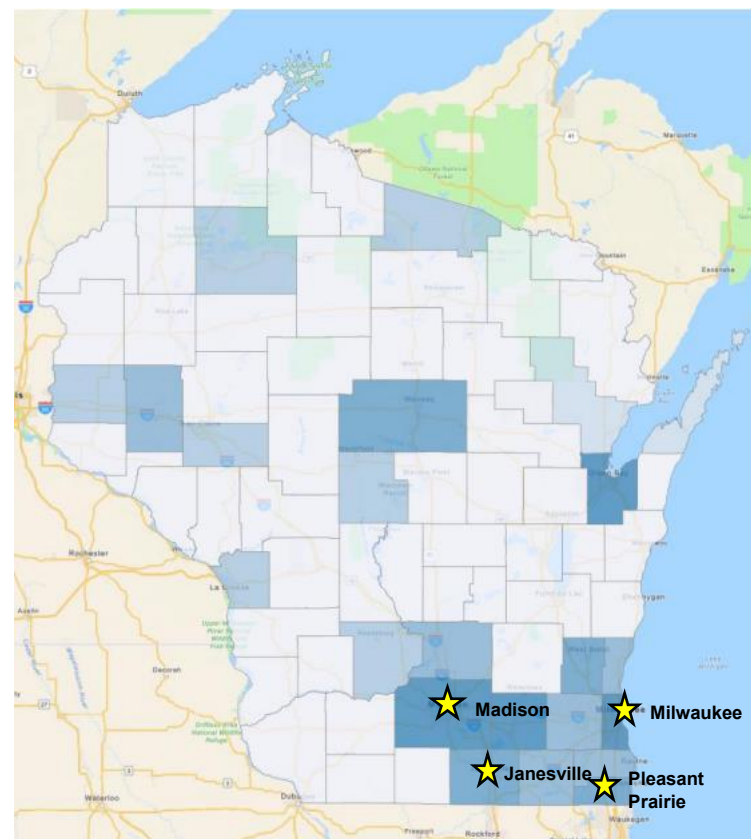
Overview of Scale and Scope

Wisconsin's biohealth industry has grown into a significant contributor to the state's economy, with more than **53,000 employees across 2,200+ companies**. The state's concentration of biopharmaceutical manufacturing employment is roughly **three times the national average**, reflecting a distinctive specialization in drug development and production.

Beyond sheer numbers, Wisconsin's industry generates an estimated **\$32 billion in annual economic impact**, positioning it as one of the state's fastest-growing and most globally relevant sectors. Activity is concentrated in Madison, Milwaukee, Pleasant Prairie, and Janesville, creating a statewide network that blends research, manufacturing, and clinical expertise. These locations are strategically located along major transportation corridors and their proximity to Chicago further enhance supply chain efficiency and access to markets, attracting both R&D and large-scale production investments.

Wausau and Green Bay are emerging biopharma hubs but do face challenges such as limited proximity to international airports and smaller scientific talent pools. Wausau is home to UAS Laboratories (≈230 employees) contributing to the region's life sciences and chemical manufacturing base. In the Green Bay MSA, MilliporeSigma recently expanded its Sheboygan facility to produce membranes for lateral flow, underscoring the broader region's strength in manufacturing and supply chain activity. These developments highlight potential for incremental biopharma-related growth anchored in Wisconsin's manufacturing capabilities, even if these markets are emerging.

Geographic Distribution by Employment in Pharmaceutical Manufacturing



Anchor Companies + Recent Expansions

Wisconsin's biopharma sector is anchored by homegrown leaders like Exact Sciences and Promega, complemented by major global players such as Eli Lilly, Catalent, and Fujifilm CDI. The state has seen multi-billion-dollar investments in molecular diagnostics, biologics, and pharmaceutical manufacturing, alongside innovations in stem cell research and medical isotopes led by firms like SHINE Technologies. Together, these companies highlight Wisconsin's growing role as a diverse and globally competitive hub for biopharma research, development, and production.

Recent Expansion	Location	Global HQ	Details
<u>Exact Sciences</u>	Madison, WI	Madison, WI	Madison-based leader in molecular diagnostics, best known for Cologuard and expanding into precision oncology.
<u>Arrowhead Pharmaceuticals</u>	Madison, WI	Pasadena, CA	Develops RNAi-based therapies targeting genetic diseases; recently invested a 160,000 square foot drug manufacturing facility and an approximately 125,000 square foot laboratory to support process development and analytical activities in Verona.
<u>Fujifilm CDI</u>	Madison, WI	Madison, WI	With a location in Madison to advance biologics development and production, it specializes in iPSC-derived cells and regenerative medicine; key player in biomanufacturing innovation.
<u>Promega Corporation</u>	Fitchburg/ Madison, WI	Fitchburg, WI	Global biotech supplier headquartered in Fitchburg, providing reagents, assays, and instruments for life sciences research.
<u>GE Healthcare</u>	Waukesha/ Madison, WI	Chicago, IL	Major imaging and medical technology firm with global headquarters for imaging and digital solutions in Waukesha, for strong operations across the Milwaukee region.
<u>Medical College of Wisconsin & Versiti Blood Research Institute</u>	Milwaukee, WI	Milwaukee, WI	Milwaukee-based academic research and clinical hub advancing cancer, cardiovascular, and blood health innovation.
<u>Eli Lilly</u>	Pleasant Prairie, WI	Indianapolis, IN	Global biopharma company leading in the discovery, development, manufacture and sale of pharmaceutical products. Investing heavily in Wisconsin manufacturing, focused on scaling biologics and next-generation therapies.
<u>Catalent</u>	Madison, WI	Somerset, NJ	Provides advanced biologics development and manufacturing services through large-scale facilities operations. Announced a \$45M expansion of its Madison biologics site, adding 200 jobs and doubling down on the region's reputation as a hub for biologics development and production.
<u>Aldevron</u>	Madison, WI	Fargo, ND	A Danaher company producing plasmid DNA, mRNA, and proteins for cell and gene therapies. Its Wisconsin presence and Innovation Lab bolsters the state's positioning in the fast-growing genetic medicine supply chain.
<u>NorthStar Medical Radioisotopes</u>	Beloit, WI	Beloit, WI	NorthStar Medical Radioisotopes expanded to increase its Molybdenum-99 production and processing capabilities using non-uranium-based electron accelerator technology.
<u>Sterling Pharma</u>	Germantown, WI	Dudley, UK	Sterling Pharma Solutions expanded its Wisconsin facility through a \$3 million investment in antibody-drug conjugate (ADC) development and manufacturing services

Research and Specialized Capabilities

The **University of Wisconsin–Madison** serves as the cornerstone of Wisconsin’s biopharma research environment. With more than **\$1.5 billion in annual R&D expenditures**, UW consistently ranks among the nation’s top public research universities. Its historic breakthroughs in stem cell science and its ongoing leadership in genetics, precision medicine, and biomedical engineering make Madison a magnet for scientific innovation. The university generates a steady pipeline of scientific talent and fosters industry partnerships through technology transfer and startup incubation.

Other institutions further reinforce this base: the **Medical College of Wisconsin** and the **Versiti Blood Research Institute** in Milwaukee specialize in translational medicine, cell therapy, and genomics. Anchors such as Promega and Fujifilm CDI provide essential tools, reagents, and advanced manufacturing capacity.

BioForward Wisconsin, the state’s industry association, plays a pivotal convening role, linking these institutions with industry and government through initiatives like the federally designated **Wisconsin Biohealth Tech Hub (WBHTH)**. This culture of collaboration is a defining strength of the ecosystem.

Wisconsin’s draw for biopharma R&D projects can be seen through recent activity by Sterling Pharma Solutions, which acquired Alcamis Germantown facility in 2020. Sterling has since built on Germantown’s legacy of custom development and manufacturing, positioning the site as a strategic U.S. hub for APIs and complex drug development services. This investment aligns with other global players deepening their Wisconsin presence, such as Merck KGaA expanding API capabilities through MilliporeSigma in Madison, Thermo Fisher’s acquisition of PPD with its CRO facility in Middleton, and Siegfried’s purchase of Curia Global’s operations in Grafton—collectively reinforcing Wisconsin’s role in the global biopharma supply chain.

Wisconsin is positioned to play a leading role in the future of personalized medicine and genetic research, areas that are reshaping biopharma globally. The state’s strength lies not only in breakthrough discoveries but in the infrastructure and ecosystem that allow research to move from lab to market. Personalized medicine depends on advanced genomics, bioinformatics, and precision diagnostics—all fields where Wisconsin’s academic and research institutions have built nationally recognized expertise.

The state’s designation as a **U.S. Tech Hub for biomanufacturing** reinforces this momentum. It signals federal recognition of Wisconsin’s ability to integrate research, workforce development, and advanced production in ways that strengthen the nation’s competitiveness in life sciences. For personalized medicine and genetic research, this means access to targeted funding, stronger industry-academic collaboration, and a platform to attract new investment.

Workforce and Talent Pipeline

Wisconsin's workforce combines scientific expertise with a strong manufacturing tradition. The state's universities and colleges confer more than 14,500 health and life sciences degrees and 4,600 engineering degrees annually, ensuring a steady pipeline of technical talent. The top occupation groups for the biopharma industry in Wisconsin were mostly in production, management, and within life, physical, and social sciences.

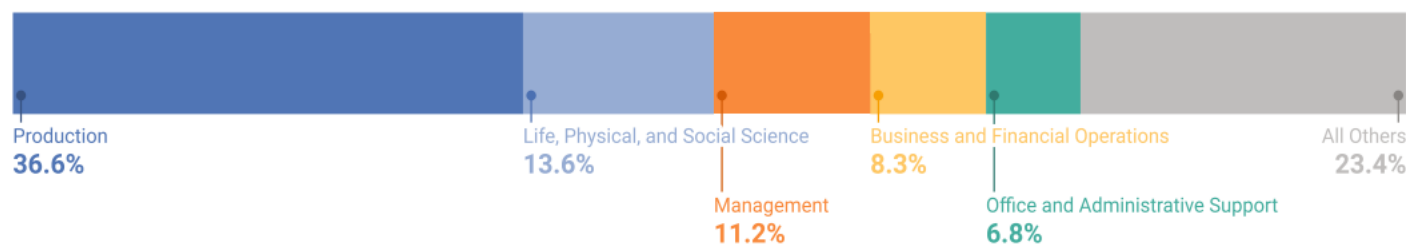
UW–Madison ranks among the top institutions for producing PhDs in biochemistry and molecular biology, while Madison College and other technical colleges deliver targeted training programs in biotechnology and biomanufacturing. UW Madison is also ranked 13th in the county for Computer Science, which is becoming more essential in the field of biopharmaceuticals. Employment in GMP manufacturing, lab technology, and genomics research is a noted specialization, with local companies benefiting from transferable skills rooted in Wisconsin's broader manufacturing base.

According to CBRE, Madison ranked 14th out of the top 20 metros for R&D (focused on the number of “core” R&D occupations, including biochemists, biophysicists, bioengineers, biomedical engineers, biological scientists and biological technicians). Madison had a total of 1,880 employees across all biopharma occupations in 2023. Of those occupations, Madison has the highest concentration of microbiologists, chemists and biological technicians of the top 100 markets in part due to highly educated workforce supported by the University of Wisconsin in Madison.

Madison's quality of life—consistently ranked among the best in the U.S.—makes it an attractive destination for talent from Tier 1 hubs. Combined with lower costs of living and doing business, these factors create a compelling environment for both retaining local graduates and attracting experienced professionals from outside the state.

Program	Awards
University of Wisconsin- Madison	
Biochemistry	187
Bioengineering & Biomedical Engineering	197
Biology/Biological Sciences, General	568
Chemistry, General	230
Industrial Engineering	153
Microbiology, General	83
Neuroscience	301
University of Wisconsin- Platteville	
Manufacturing Engineering Technology	58
University of Wisconsin- La Crosse	
Microbiology, General	21
Marquette University	
Biomedical Sciences, General	161

TOP OCCUPATION GROUPS



Workforce and Talent Pipeline

Wisconsin can tap into neighboring labor sheds to support growth in biopharma manufacturing, precision medicine, and neurotech/digital health. The alignment of academic output with industry needs positions Wisconsin to attract early-career talent, build regional training partnerships, and support cluster development in Madison and Milwaukee.

Chicago Area

- Strengths:* Strong enrollment in Biology and Neuroscience at UIC and Northwestern; diverse program offerings across multiple universities.
- Limitations:* Limited presence in Microbiology; DePaul has low STEM enrollment overall.

Greater Illinois

- Strengths:* UIUC excels in Chemistry, Engineering, and Bioengineering with the highest total enrollment.
- Limitations:* Illinois State University has minimal STEM program representation.

Iowa

- Strengths:* Iowa State and University of Iowa show strong numbers in Industrial Engineering, Biology, and Neuroscience.
- Limitations:* Microbiology and Biochemistry are underrepresented

Minnesota

- Strengths:* University of Minnesota-Twin Cities has high enrollment across all STEM programs, especially Biology and Chemistry. No major limitations evident; most balanced STEM portfolio.

	Chicago				Greater Illinois		Iowa		Minnesota
	Northwestern University	University of Chicago	DePaul University	University of Illinois Chicago	University of Illinois Urbana-Champaign	Illinois State University	Iowa State University	University of Iowa	University of Minnesota-Twin Cities
Total - All Programs	10,406	7,680	5,887	9,307	17,509	5,698	8,096	9,815	13,831
Biochemistry	X	X	4	79	54	5	50	40	80
Bioengineering and Biomedical Engineering	105	X	X	128	125	X	56	116	150
Biology/Biological Sciences, General	151	127	47	482	16	133	158	92	356
Chemistry, General	82	135	12	58	160	25	38	76	150
Industrial Engineering	69	X	X	67	122	X	133	45	104
Microbiology, General	X	6	X	X	18	X	42	31	2
Neuroscience	142	65	31	100	12	X	4	67	104

Workforce and Talent Pipeline

- **Scale of employment:** Madison accounts for just over half (3,559 of 6,582 jobs) of Wisconsin's total biopharma-related workforce, showing its role as the state's core employment hub.
- **R&D concentration:** Madison has a relatively higher share of chemists, biological technicians, and industrial engineers, reflecting its research-driven cluster anchored by UW–Madison and local biotech firms. Madison is also home to Epic Systems, a digital health company for EHR software, which fuels R&D activity in the state through its 13,000 employees.
- **Manufacturing strength:** Both Madison and the state overall employ large numbers of packaging/filling operators and chemical equipment operators, but Madison holds a disproportionate share of these jobs (over 50% of state totals), highlighting its strength in production scale-up. Additionally, Marquette boasts a strong biomedical sciences and engineering program, which broadens the area's manufacturing capabilities.
- **Wages:** Across nearly all occupations, Madison wages slightly exceed state averages (e.g., industrial engineers at \$106K vs. \$104K; supervisors at \$87K vs. \$86K), reinforcing its status as a competitive talent market.
- **Specialized roles:** Managerial and high-skill positions such as industrial production managers and inspectors/testers are also more concentrated in Madison, suggesting higher-value operations relative to the rest of the state.

Madison MSA Staffing Pattern

6-digit Occupation	Empl	Avg Ann Wages	Annual Demand
Packaging and Filling Machine Operators and Tenders	408	\$46,300	47
Chemical Equipment Operators and Tenders	304	\$53,400	28
Inspectors, Testers, Sorters, Samplers, and Weighers	176	\$65,100	21
First-Line Supervisors of Production and Operating Workers	148	\$87,400	15
Industrial Engineers	145	\$106,300	11
Chemists	144	\$73,500	13
Laborers and Freight, Stock, and Material Movers, Hand	89	\$48,500	12
Biological Technicians	88	\$58,900	11
Industrial Production Managers	76	\$153,900	6
Industrial Machinery Mechanics	69	\$76,800	8
Remaining Component Occupations	1,912	\$89,000	180
Total	3,559		

Wisconsin Staffing Pattern

6-digit Occupation	Empl	Avg Ann Wages	Annual Demand
Packaging and Filling Machine Operators and Tenders	751	\$45,800	85
Chemical Equipment Operators and Tenders	559	\$51,900	50
Inspectors, Testers, Sorters, Samplers, and Weighers	324	\$64,500	38
First-Line Supervisors of Production and Operating Workers	272	\$86,200	26
Industrial Engineers	267	\$104,100	20
Chemists	265	\$78,500	23
Laborers and Freight, Stock, and Material Movers, Hand	164	\$48,700	22
Biological Technicians	161	\$58,000	19
Industrial Production Managers	140	\$152,100	10
Industrial Machinery Mechanics	127	\$75,800	14
Remaining Component Occupations	3,552	\$90,400	321
Total	6,582		

Source: JobsEQ

Annual demand is a sum of the annual projected growth demand and separation demand. Separation demand is the number of jobs required due to separations—labor force exits (including retirements) and turnover resulting from workers moving from one occupation into another. Note that separation demand does not include all turnover—it does not include when workers stay in the same occupation but switch employers. Growth demand is the increase or decrease of jobs expected due to expansion or contraction of the overall number of jobs.

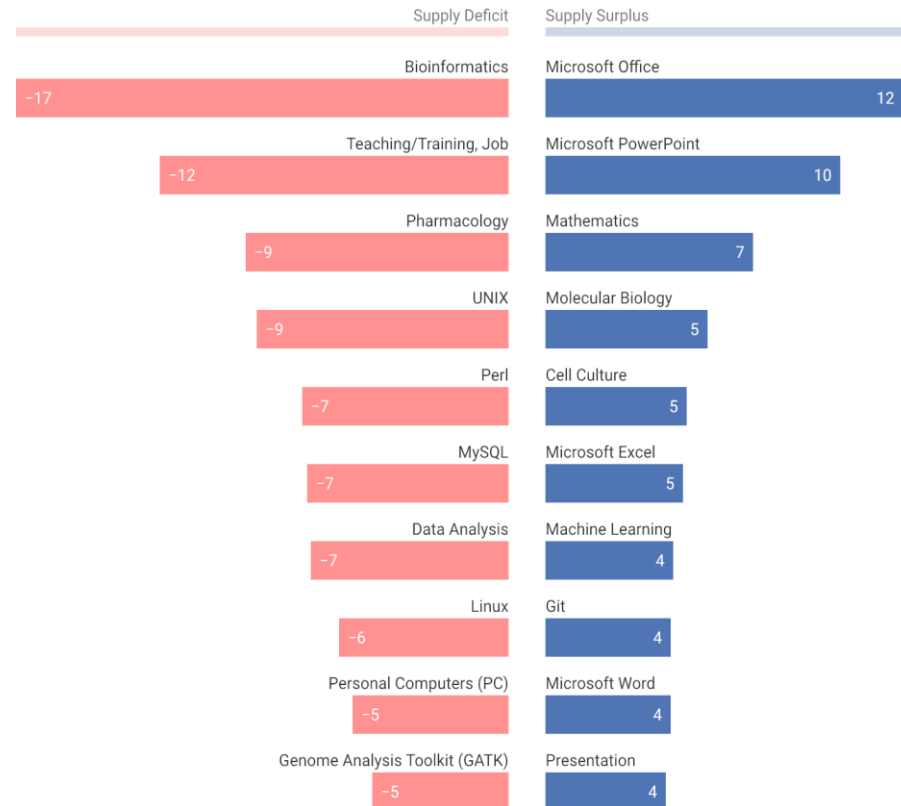
Workforce and Talent Pipeline

Wisconsin's biopharma sector is well-positioned for growth, but skills mismatches present both challenges and opportunities. Employers report **gaps in advanced technical skills** such as bioinformatics, pharmacology, data analysis, and programming languages (UNIX, Perl, MySQL, Linux), as well as in specialized research tools like genome analysis. These shortages suggest that while the state has a strong foundation in life sciences, additional investment in **computational biology, digital health, and data-driven research training** will be critical to sustaining innovation. Courses in bioinformatics and health systems engineering could address some of these gaps as well.

However, the region shows a **surplus of general skills** such as Microsoft Office, PowerPoint, and presentation abilities, alongside moderate strength in molecular biology, cell culture, and machine learning that is supported by strong life science and molecular biology programs at Wisconsin universities. This indicates that Wisconsin's workforce is well-prepared in baseline research and professional skills but requires more targeted development in cutting-edge bioinformatics and computational science to meet the evolving needs of biopharma R&D. Southern Wisconsin has already begun to make these investments through its computer science programs at UW Madison and new AI and Engineering courses at UW Milwaukee.

Addressing these gaps will ensure that the state can fully capitalize on its growing cluster in Madison and beyond, attracting investment in high-value research and advanced manufacturing.

Skill Gaps
Biological Scientists, Wisconsin



Source: JobsEQ®
Data as of 2025Q1; openings and candidate sample compiled in March 2025



ALLIANT ENERGY + BIOFORWARD

Wisconsin Business Conditions + Differentiators

Wisconsin's Differentiators

ALLIANT ENERGY
+ BIOFORWARD

Wisconsin differentiates itself from larger, more saturated markets through its unique blend of **collaboration, cost-effectiveness, and central location**.

Biopharma-Specific Differentiators

Biohealth Tech Hub Designation: Out of 192 tech hub applications, Wisconsin is one of 12 states to receive EDA Tech Hub designation and \$49M in federal funding for personalized medicine, setting it apart nationally.

Cluster Strength: The Madison metro ranks nearly twice the national average in biohealth concentration, creating density like established hubs but with room to grow. Industry leaders like Exact Sciences, Promega, GE HealthCare, and PPD-Thermo Fisher anchor the ecosystem.

Research Powerhouse (UW–Madison): UW–Madison ranks consistently in the top 10 for NIH funding among public universities. It has world-class research in genomics, stem cells, imaging, and oncology. The Wisconsin Alumni Research Foundation (WARF) is one of the oldest and most successful tech transfer organizations in the U.S., fostering commercialization.

Manufacturing & Scale-up Capacity: Unlike some coastal hubs, Wisconsin pairs cutting-edge R&D with strong biomanufacturing capacity (Promega, Millipore Sigma, Eurofins, Catalent). This integration across the value chain (research → development → manufacturing) makes Wisconsin attractive for end-to-end biohealth operations.

Workforce Development in Biohealth: Actualizing Biohealth Career Pathways and technical colleges support industry-aligned training. Apprenticeships and inclusion initiatives expand access to biotech jobs—something many coastal states are still working to scale.

General Economic & Business Environment

Cost competitiveness: Operating costs—labor, utilities, and real estate—are substantially lower than in coastal Tier 1 hubs, providing firms with opportunities to scale efficiently. The state's geography offers logistical advantages, with proximity to major markets such as Chicago and Minneapolis, and reliable access to national supply chains.

Recognition of these strengths is growing: the U.S. Economic Development Administration recently designated Wisconsin as a **Tech Hub in personalized medicine**, bringing federal resources and national visibility.

Central Location & Logistics: Positioned in the Midwest with proximity to Chicago's O'Hare International Airport, Wisconsin provides global connectivity. Strong freight, rail, and interstate systems support supply chain efficiency.

Stable Workforce: Wisconsin has one of the highest labor force participation rates in the Midwest. Retention and turnover rates are better than in more transient labor markets on the coasts.

Public–Private Partnerships: Active collaboration between state government, the Wisconsin Economic Development Corporation (WEDC), universities, and industry (e.g., Wisconsin Investment Fund). Policies emphasize workforce pipelines and support for scaling companies.

Collaborative Business Environment

Cross-Sector Alignment

Wisconsin's biopharma sector is built on a culture of collaboration across academia, industry, and government. New firms benefit from an ecosystem where connections are made quickly, reducing isolation and accelerating integration.

Industry Convening

BioForward Wisconsin, the state's biohealth association, coordinates strategy and advocacy across companies, universities, and policymakers, strengthening statewide momentum.

Research & Commercialization Powerhouse

UW–Madison drives world-class research in genomics, oncology, and imaging, while WARF supports commercialization through tech transfer, intellectual property, and startup support. Together, they create a strong pipeline from discovery to market. This, combined with major company headquarters like Epic Systems, created a strong research/manufacturing base in Madison.

Public–Private Collaboration in Action

Joint efforts secured federal Tech Hub designation and a \$49M implementation grant, reinforcing Wisconsin's position in personalized medicine. Initiatives like Actualizing Biohealth Career Pathways link technical colleges, workforce boards, and industry to train diverse talent through apprenticeships, skills training, and inclusive career services.

Cost Competitiveness

Operating costs in Wisconsin are considerably lower than in coastal Tier 1 biopharma hubs. Labor costs for biological scientists are 25–40 percent below Boston or San Francisco for entry level and 37-59 percent for experienced hires while still supporting a highly skilled workforce in biomanufacturing, R&D, and quality assurance.

Real estate costs are similarly advantageous: lab and office space in Madison is often 200-300 percent cheaper than in Cambridge or the Bay Area. **Utilities** represent another differentiator. Alliant Energy and other utilities in Wisconsin offer stable, reliable, and affordable power—critical for biomanufacturing facilities that require uninterrupted electricity and clean water access.

	Pharmaceutical & Medical Manufacturing		Biological Scientists		
MSA	Total Wages	Avg Ann Wages per Worker	Annual Wage-Entry Level	Annual Wage-Experienced	Rent per sqft
Boston-Cambridge-Newton, MA-NH	\$483,897,087	\$185,608	\$76,800	\$147,000	\$49.06
San Francisco-Oakland-Fremont, CA	\$1,159,252,603	\$270,614	\$86,000	\$170,100	\$66.06
Washington-Arlington-Alexandria, DC-VA-MD-WV	\$673,820,185	\$199,699	\$68,400	\$144,400	\$53.29
San Diego-Chula Vista-Carlsbad, CA	\$405,186,115	\$171,451	\$77,000	\$137,700	\$45.23
Raleigh-Durham-Cary, NC	\$658,208,257	\$138,729	\$62,500	\$128,700	\$27.77
Denver-Aurora-Greeley, CO	\$93,998,084	\$91,631	\$62,600	\$118,200	\$37.39
Indianapolis-Carmel-Greenwood, IN	\$1,809,630,270	\$224,924	\$52,700	\$120,100	\$23.79
Columbus-Marion-Zanesville, OH	\$83,414,170	\$102,380	\$56,600	\$104,400	\$18.25
Madison-Janesville-Beloit, WI	\$108,897,540	\$116,542	\$61,300	\$107,200	\$16.77

Strategic Location + Logistics

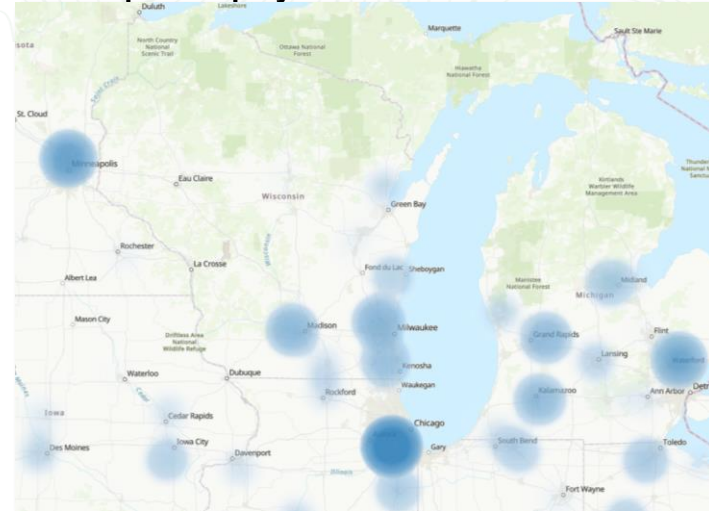
In the heat map for the broader NAICS code of Chemical Manufacturing on the left, there are many leading MSAs, creating significant competition for Madison. By zooming in on the NAICS for Pharmaceutical and Medical Manufacturing, a clear hub surrounding Wisconsin arises for the Madison to continue to build upon.

Geographically, Wisconsin sits at the center of the U.S. market and offers companies robust logistical advantages. Madison is within a three-hour drive of **Chicago O'Hare International Airport**, one of the world's busiest air cargo hubs, providing global connectivity for clinical trial materials and finished pharmaceuticals. Proximity to **Minneapolis and Milwaukee** further enhances access to major Midwestern healthcare and manufacturing markets. This proximity to other major markets increases the labor shed of Madison and provides the greater MSA with a strong pipeline for the industry to continue to grow.

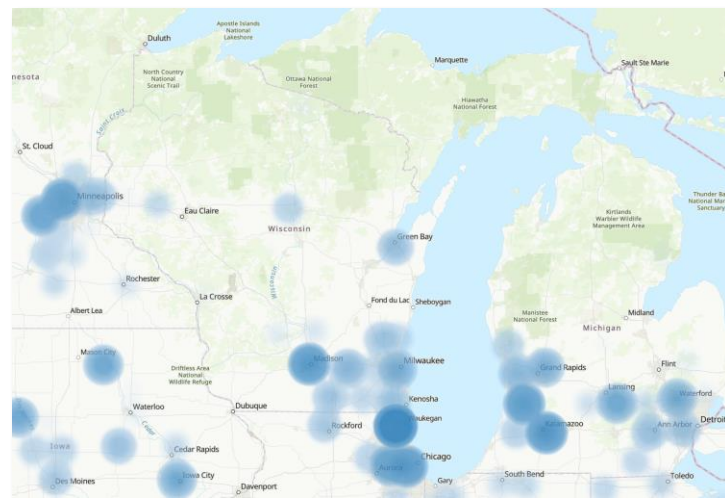
Interstate highways and regional rail lines support efficient freight movement, making Wisconsin an ideal hub for just-in-time supply chains. Importantly, the state is less exposed to natural disasters such as hurricanes or wildfires, offering companies stability and supply chain resilience.

These advantages position Wisconsin as a strategic distribution and production location within the broader U.S. market.

Heat Map of Employment in Chemical Manufacturing



Heat Map of Employment in Pharmaceutical Manufacturing



Incentives + Growth Policies

Wisconsin's business environment is reinforced by competitive state incentives tailored to advanced manufacturing and R&D. In May 2024, Governor Tony Evers and WEDC launched a \$100 million public-private investment fund, splitting \$50M in federal funds with \$50M matched by private investors. The fund targets startups and emerging firms across sectors including health care, technology, manufacturing, and agriculture. Notably, HealthX Ventures and Venture Investors Health Fund received initial allocations of \$15M and \$12M, respectively.

The Wisconsin Economic Development Corporation (WEDC) offers refundable job creation and investment tax credits, while workforce training programs can be customized for company-specific needs. Programs such as the Qualified New Business Venture (QNBV) credit further encourage investment in early-stage companies by providing tax incentives to investors.

In August 2025, the Evers administration announced an incentive for Eli Lilly's \$4 billion expansion—providing up to \$100 million in performance-based state tax credits. Earlier, in July 2025, WEDC awarded \$2 million in tax credits to Catalent for a \$45 million investment, helping create ~200 highly skilled biohealth jobs in Madison. This marks the fourth time the state has supported Catalent's multi-phase growth through targeted tax incentives.

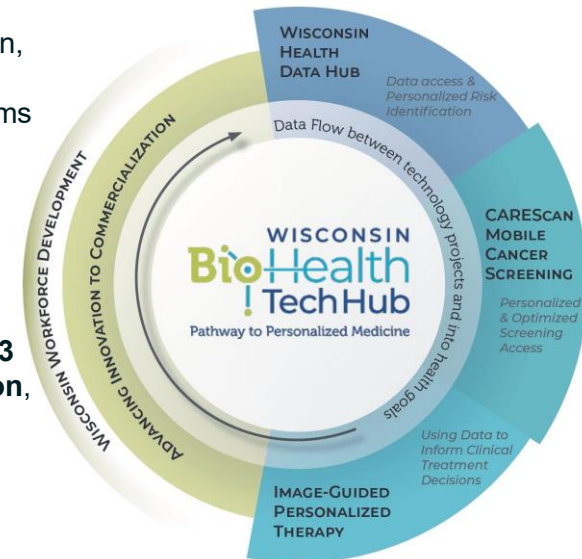
At the local level, communities like Madison and Dane County support projects through infrastructure readiness, TIF financing, and site development partnerships. Utilities such as Alliant Energy also play a direct role in economic development, helping with site selection, infrastructure, and customized energy solutions. The state also has strategic focus areas & collaborative projects outlined by UW-Madison and consortium partners. Key initiatives include:

- **Data infrastructure:** Secure health-data ecosystems for personalized therapy development
- **Mobile cancer screening:** Deploying fleets to underserved areas to close health equity gaps.
- **AI-powered theranostics:** Enhancing imaging and clinical data integration.
- **Manufacturing & commercialization support.**
- **Workforce development:** Building inclusive pipelines for biohealth talent.

National Recognition + Momentum

ALLIANT ENERGY
+ BIOFORWARD

- **Federal Recognition & Tech Hub Designation:** In October 2023, Wisconsin was officially designated as one of 31 inaugural Regional Technology & Innovation “Tech Hubs”—and one of only 12 focused on biotech/personalized medicine—by the U.S. Economic Development Administration under the CHIPS and Science Act. This strategic recognition positions Wisconsin at the forefront of national biotech innovation and leadership.
- **Phase 2 Grant: \$49 Million to Fuel Biohealth Innovation:** In July 2024, Wisconsin secured a \$49M Phase 2 Implementation Grant, surpassing Phase 1, to further develop its biohealth ecosystem. Combined with \$7.5M in state funding and \$24M in industry commitments, total investment exceeds \$80M.
- **Economic Impact: Jobs & Activity:** Projections estimate 30,000+ direct jobs in personalized medicine and an additional 111,000 indirect jobs over the next decade, along with \$9 billion in economic. The sector already boasts a \$32 billion annual contribution, supports 129,000+ jobs, and adds \$6 billion in products and services. Madison and Milwaukee regions stand out as national biohealth leaders, with Madison nearly twice the national average in cluster concentration.
- **Ecosystem & Leadership:** A broad consortium of 18 partners—including UW–Madison, Exact Sciences, Madison College, BioForward Wisconsin, and economic development entities—drives the Tech Hub’s strategy and execution. Madison College leads programs like the Actualized BioHealth Career Pathways (ABC Pathways) to create workforce readiness via apprenticeships and advanced training.
- **Strategic Momentum:** The distinguished Tech Hub status not only unlocks significant public investment, but also draws private sector interest and expansions—such as Microsoft citing the designation in its decision to expand a data center in Wisconsin. Momentum is further reinforced by recent high-profile investments such as **Eli Lilly’s \$3 billion expansion in Pleasant Prairie** and **Catalent’s \$45 million Madison expansion**, both of which signal strong confidence from global firms in Wisconsin’s operating environment. These developments place Wisconsin firmly on the map for biopharma executives seeking cost-efficient, collaborative, and strategically located alternatives to saturated coastal markets.





ALLIANT ENERGY + BIOFORWARD

Competitive Positioning

Competitive Positioning

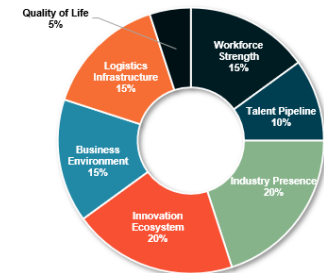
In Phase 03, GLS will benchmark Wisconsin (and specifically the Madison MSA) against other Metropolitan Statistical Areas in the U.S., with a particular focus on other established and emerging industry hubs to determine differentiators and gaps.

The Location Benchmarking Analysis will help identify realistic opportunity areas, gaps to address, and potential niche positioning within the broader biopharma landscape. This analysis will be structured similarly to that of a corporate site selection analysis, utilizing a weighted comparative model to evaluate location-based conditional quality and high-level operating costs.

The result of the Phase 03 Location Benchmarking Analysis will be an objective overview of how competitive the Madison MSA currently is relative to other MSAs in the U.S., as well as an in-depth review of key criteria that differentiate Madison, as well as those that currently hinder its competitiveness.

Requirements	Balanced
Client	Global biopharma adding a core commercial manufacturing site for a new biologic; prioritizes reliability and skilled workforce.
Primary Driver	Reliable supply & skilled workforce
Real Estate Needs	250,000 sq. ft
Jobs	350
Talent Focus	Bioprocess operators, QA/QC, engineers, maintenance
Utility Requirements	Power: 15 MW, 85% load factor Natural Gas: 50 MCF/hr Water: 180,000 GPD Wastewater: 12,000 GPD
Operations	24/7, 340 days/year
Capex	\$700M

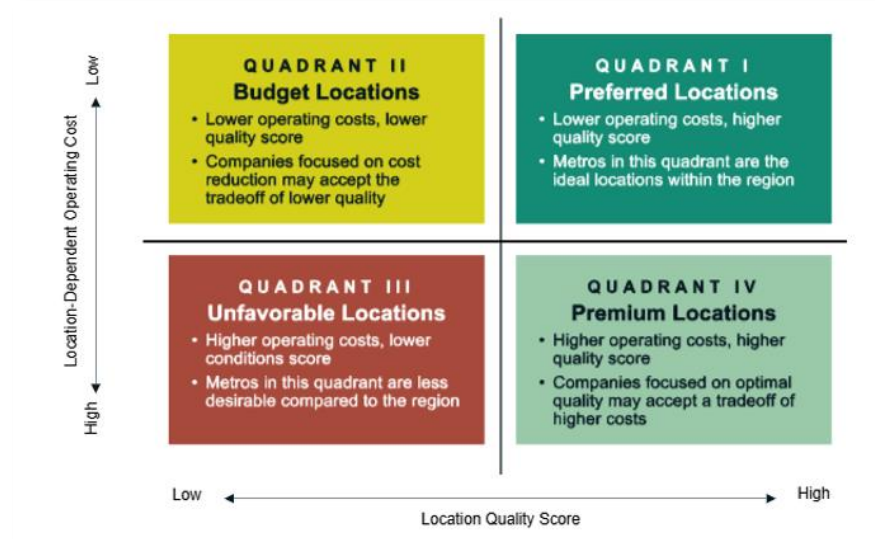
Location Quality Primary Criteria



Location Dependent Operating Cost calculations include the following:

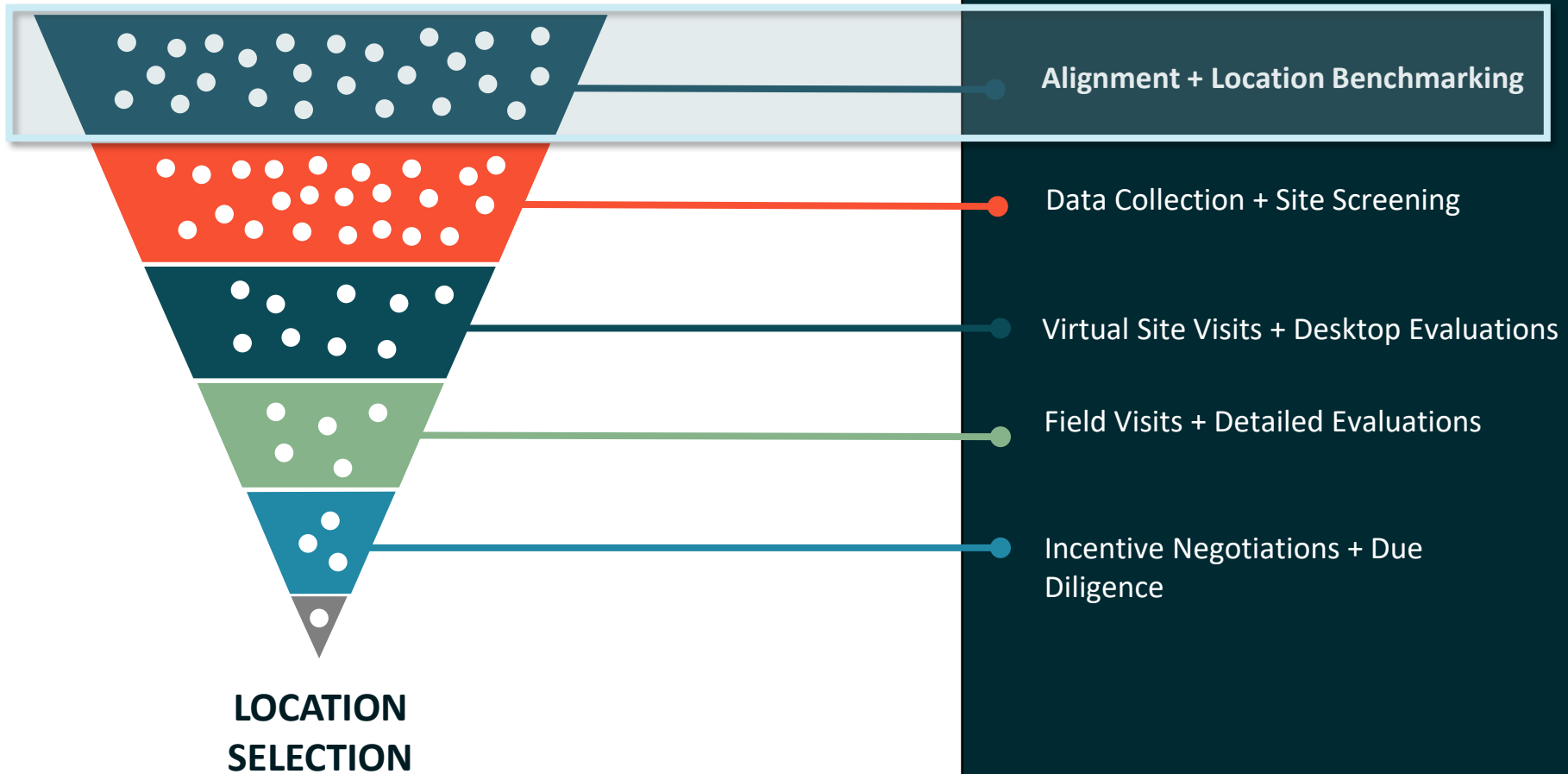
- Wages for Biopharma Manufacturing staffing profile
- Lease rate
- Utilities

For this model, the final rankings are based on a weighted average of 90% of a location's quality ranking and 10% of its operating cost ranking.



Site Selection Process

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Benchmarking Results: Sample R&D Project

Project Profile

	R&D Project
Client	Biopharmaceutical company supporting clinical trials and technology transfer activities.
Primary Driver	- Access to specialized biopharma talent. - Proximity to major research institutions and innovation ecosystem.
Real Estate Needs	100,000 sq. ft R&D and pilot-scale facility. - Combination of laboratories, small-scale production suites, QC/QA space, warehouse, and offices.
Jobs	150 employees spanning research, development, quality, and support functions.
Talent Focus	- Process scientists (cell culture, purification, formulation). - Analytical development specialists (bioassays, chromatography, molecular testing). - QA/QC professionals. - Tech transfer and scale-up engineers.
Utility Requirements	<u>Power</u>: 5 MW, 60% load factor (HVAC, bioreactors, cold storage, labs). <u>Natural Gas</u>: 10 MCF/hr (steam, sterilization, building systems). <u>Water</u>: 50,000 GPD, including requirements for laboratory-grade purification. <u>Wastewater</u>: 4,000 GPD with provisions for safe disposal of biologically active waste.
Operations	16/7 schedule, ~250 days/year, with flexible campaigns to align with project pipelines.
Capex	\$200M investment in facility buildout, lab equipment, specialized R&D infrastructure, and support systems.

The project specs shown on the left represent a sample biopharma R&D project.

- **100,000 sq. ft. is a common entry / growth size:** Many campus expansions or new science buildings aim around that scale for R&D or lab campuses (e.g., HudsonAlpha, Bayshore).
- **Blending lab / office / admin space:** Don't expect all the square footage to be "wet lab" or process space. Many projects allocation 30-50% of space for office, support spaces, utility rooms, corridors, cold storage, etc.
- **Phased growth / modular capacity:** Some projects are designed for modular expansion or staged buildouts to accommodate future scale.
- **Greater-than-clinical scale as a benchmark:** Larger R&D development campuses (like Pfizer BioPlace) show how projects can evolve and scale.
- **Utility infrastructure and flexibility are key constraints:** In every case, the ability to support cleanrooms, process equipment, HVAC, high-purity water, and facility services is as critical (if not more) than just square footage.

Representative Projects

Project / Facility	Approx. Scale / Key Specs	Notes
Pfizer BioPlace (Chesterfield, MO)	~ 294,000 ft ² R&D + process development facility supporting 450 scientists & staff (EwingCole)	Mixed R&D and process development footprint; serves as an example of a scale-up facility larger than the benchmark profile, supporting both clinical and commercial development functions.
Therapure (Mississauga, Ontario, Canada)	~ 130,000 ft ² cGMP biopharma facility including development / manufacturing / fill-finish (Wikipedia)	Integrated R&D and cGMP manufacturing facility representing a strong analog for combined development and fill/finish operations—broader in scope than the benchmark project.
Bayshore Bio Life Science Campus (Palo Alto, CA)	A 100,000 ft ² multi-phase conversion to lab / life science space (BGO)	Multi-phase conversion of office to lab and life science space; illustrates adaptive reuse and modular lab design at a smaller scale relative to the benchmark project.
HudsonAlpha Genomics / Life Sciences Campus (Huntsville, AL)	New 100,000 ft ² building added to existing life sciences campus (HudsonAlpha Institute for Biotechnology)	Research-focused life sciences complex of roughly 100,000 sq. ft., directly comparable in scale to the benchmark profile; emphasizes genomics and lab-intensive R&D functions.
Genzyme / ARC-designed expansions (Boston area, MA)	~ 127,000 ft ² addition to an existing biopharma campus (Wikipedia)	Incremental expansion of an existing biopharma campus; reflects a phased growth approach with integration of specialized lab and support infrastructure.
Roche U.S. Investment / New R&D & Manufacturing Facilities	Roche recently announced U.S. investment including a ~700,000 ft ² new drug manufacturing facility in Holly Springs, NC (DCAT Value Chain Insights)	Represents a large-scale, fully integrated R&D and manufacturing investment; demonstrates the upper end of the industry scale continuum relative to the benchmark project.
Pfizer R&D Facility (CRG listing)	~240,000 ft ² laboratory component + 70,000 ft ² offices (Real CRG)	Large R&D campus integrating labs, offices, and support spaces; provides useful ratios between functional areas for comparison with benchmark lab and administrative layouts.
Roche Diagnostics Santa Clara Campus Renovation	~ 35,000 ft ² lab + 100,000 ft ² office / amenity space (McCarthy)	Smaller-scale renovation illustrating retrofitting of existing office and lab space; shows how infrastructure can be adapted to support biopharma R&D operations.
Navin Molecular Process R&D Expansion	Facility expansion to increase process R&D capacity to host multiple biotech companies (Contract Pharma)	Process-focused expansion that increases R&D throughput; comparable in function to the benchmark project but at a smaller scale and narrower technical focus.

Top Performing Locations

Ranking	R&D Model
1	Raleigh-Cary, NC
2	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD
3	Durham-Chapel Hill, NC
4	Boston-Cambridge-Newton, MA-NH
5	San Diego-Chula Vista-Carlsbad, CA
6	Houston-Pasadena-The Woodlands, TX
7	Atlanta-Sandy Springs-Roswell, GA
8	Washington-Arlington-Alexandria, DC-VA-MD-WV
9	Madison, WI
10	Seattle-Tacoma-Bellevue, WA
11	Dallas-Fort Worth-Arlington, TX
12	New York-Newark-Jersey City, NY-NJ
13	Austin-Round Rock-San Marcos, TX
14	Salt Lake City-Murray, UT
15	San Francisco-Oakland-Fremont, CA
16	Denver-Aurora-Centennial, CO
17	Chicago-Naperville-Elgin, IL-IN
18	Miami-Fort Lauderdale-West Palm Beach, FL
19	Nashville-Davidson--Murfreesboro--Franklin, TN
20	Indianapolis-Carmel-Greenwood, IN

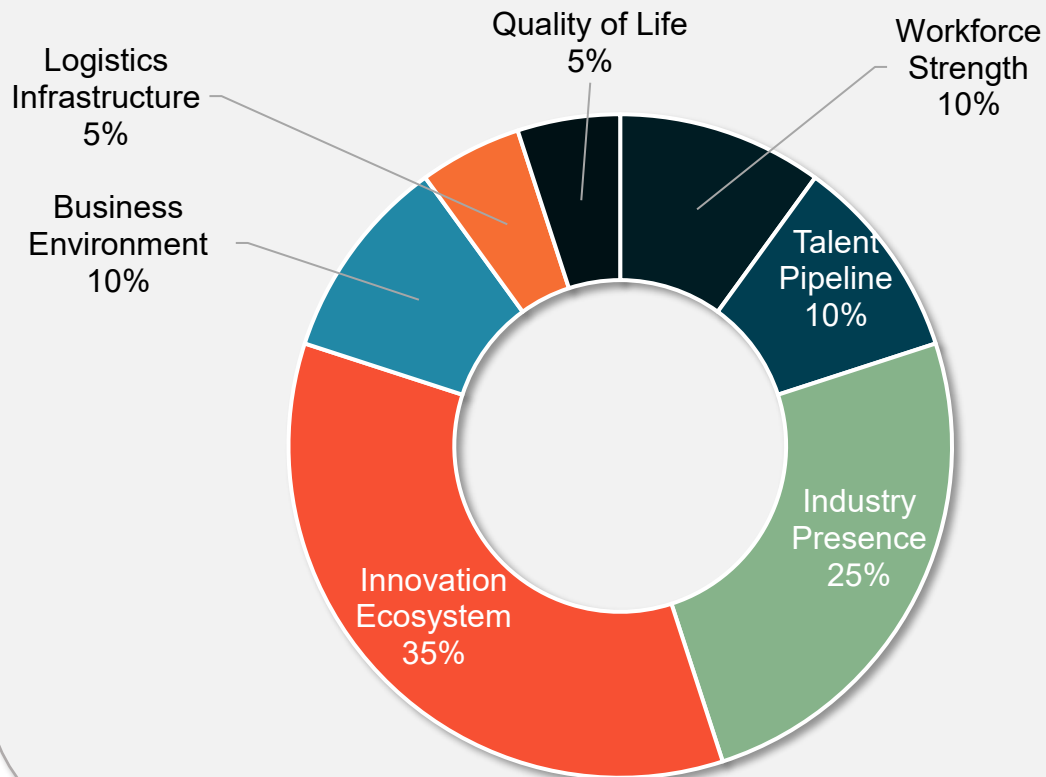
Madison ranks #9 nationally among top-performing biopharma R&D locations, placing it firmly within the second tier of U.S. life sciences hubs. This position reflects the region's ability to compete with far larger markets by leveraging its integrated research ecosystem, cost efficiency, and collaborative business climate. While coastal metros like Raleigh-Durham, Boston, and Philadelphia continue to dominate in scale and venture activity, Madison distinguishes itself through balance—offering both research excellence and accessible operating conditions that appeal to high-value but cost-sensitive projects.

Key Takeaways

- **R&D Competitiveness:** Madison ranks among the top 10 R&D-performing metros, outperforming larger markets such as Dallas, Chicago, and San Francisco. Its balance of research capacity, talent availability, and operating cost efficiency underscores its strength as a cost-effective innovation hub.
- **Strong Academic + Research Foundation:** Madison's score was driven primarily by high research intensity, NIH funding volume, and academic output—anchored by the University of Wisconsin—Madison's leadership in biotechnology, biochemistry, and biomedical engineering.
- **Talent Depth:** Madison achieved above-average workforce scores relative to its market size, reflecting strong availability of scientists, engineers, and lab technicians. This advantage is amplified by high retention rates and strong workforce alignment through the state's technical college network.
- **Industry Scale:** Madison's lower relative weighting in corporate presence and venture activity indicates a key growth frontier—expanding private-sector anchors and investment capital to elevate its position alongside Tier 1 hubs like Raleigh-Durham and Boston.

Primary Criteria

Location Quality Primary Criteria



Overview

The R&D benchmarking model evaluates each metro's competitiveness across seven weighted factors that reflect the key drivers of biopharma R&D location decisions.

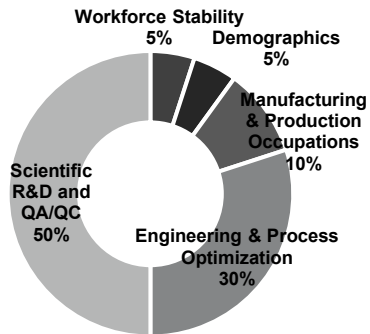
- **Innovation Ecosystem (35%)** – Research output, NIH funding, and commercialization strength.
- **Industry Presence (25%)** – Density of biopharma firms, manufacturers, and CROs.
- **Talent Pipeline (10%)** – Graduate output and education alignment in life sciences.
- **Workforce Strength (10%)** – Specialized labor availability and wage competitiveness.
- **Business Environment (10%)** – Cost structure, incentives, and regulatory climate.
- **Logistics Infrastructure (5%)** – Connectivity through airports, highways, and freight.
- **Quality of Life (5%)** – Livability and amenities that attract and retain talent.

Secondary Criteria

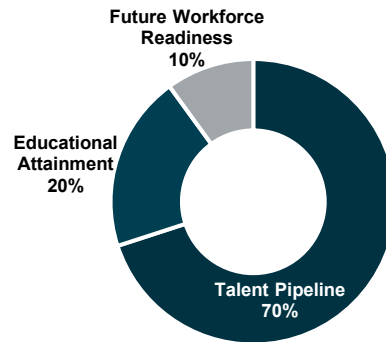
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Each primary category is supported by detailed secondary metrics that capture the underlying conditions influencing biopharma R&D competitiveness. These factors evaluate workforce specialization, academic and industry linkages, infrastructure quality, and overall operating environment—providing a comprehensive, data-driven view of how each metro performs beyond headline indicators.

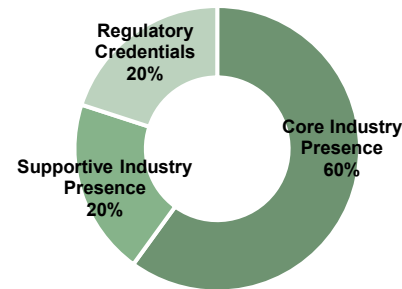
Workforce Strengths



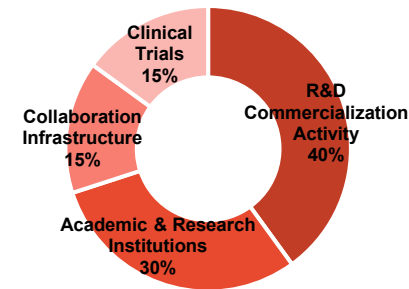
Talent Pipeline



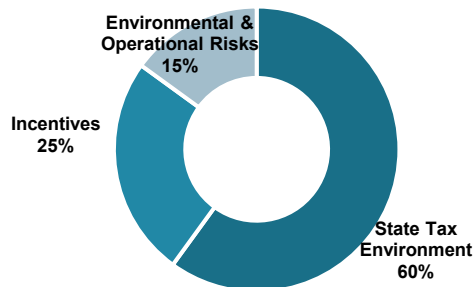
Industry Presence



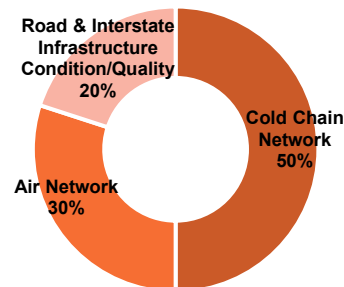
Innovation Ecosystem



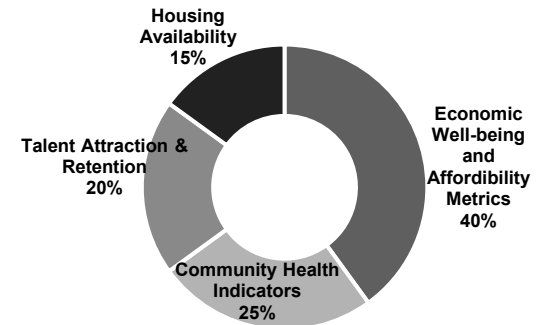
Business Environment



Logistics Infrastructure



Quality of Life



Conditional Scores

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The conditional analysis compares how each metro performs across all weighted factors in the R&D model. Madison ranks #9 nationally, driven by strong scores in innovation ecosystem, talent pipeline, and workforce strength, while maintaining competitive operating conditions relative to larger coastal hubs.

Conditional Analysis: Top 20

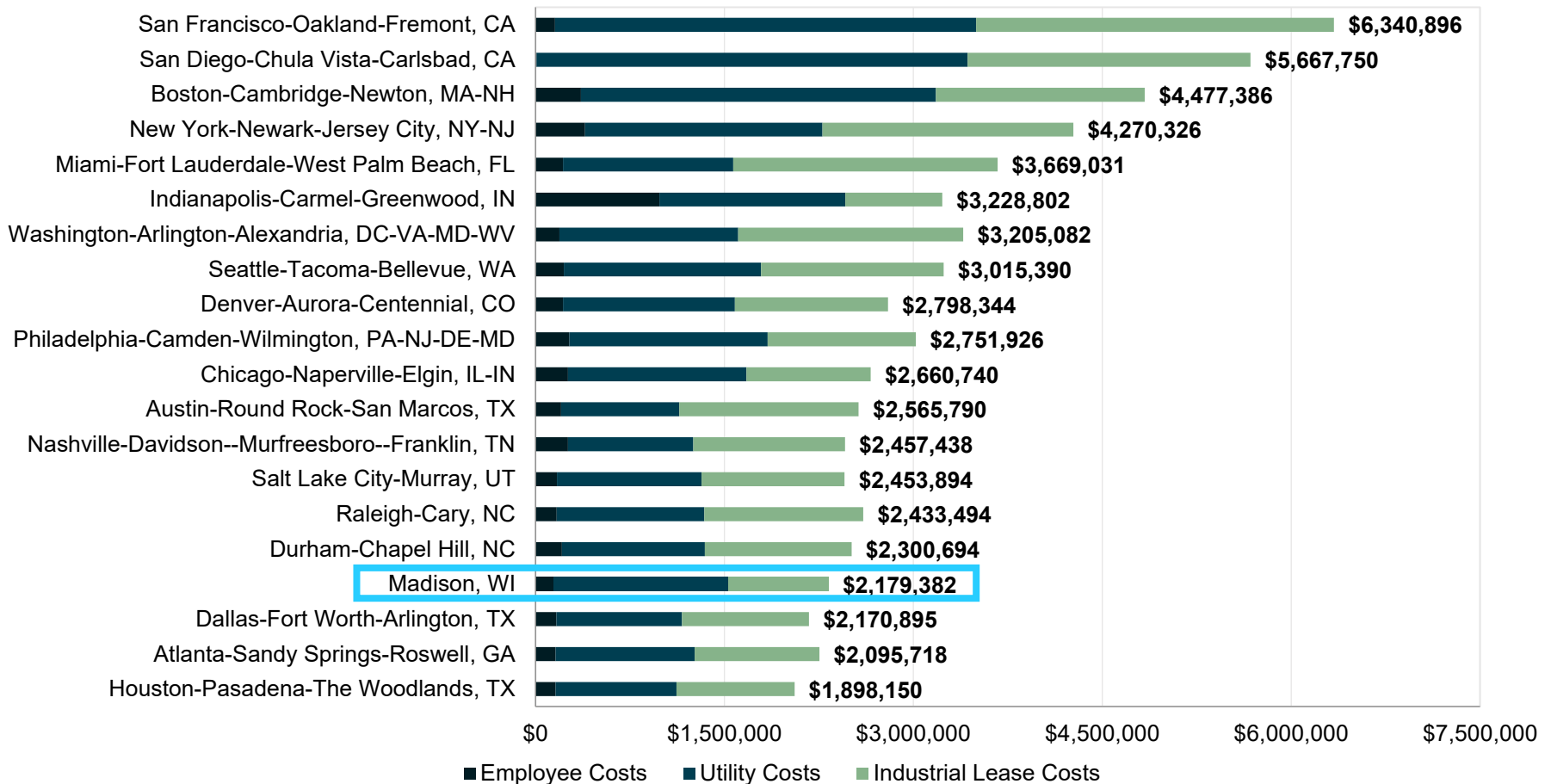


Annual Operating Costs

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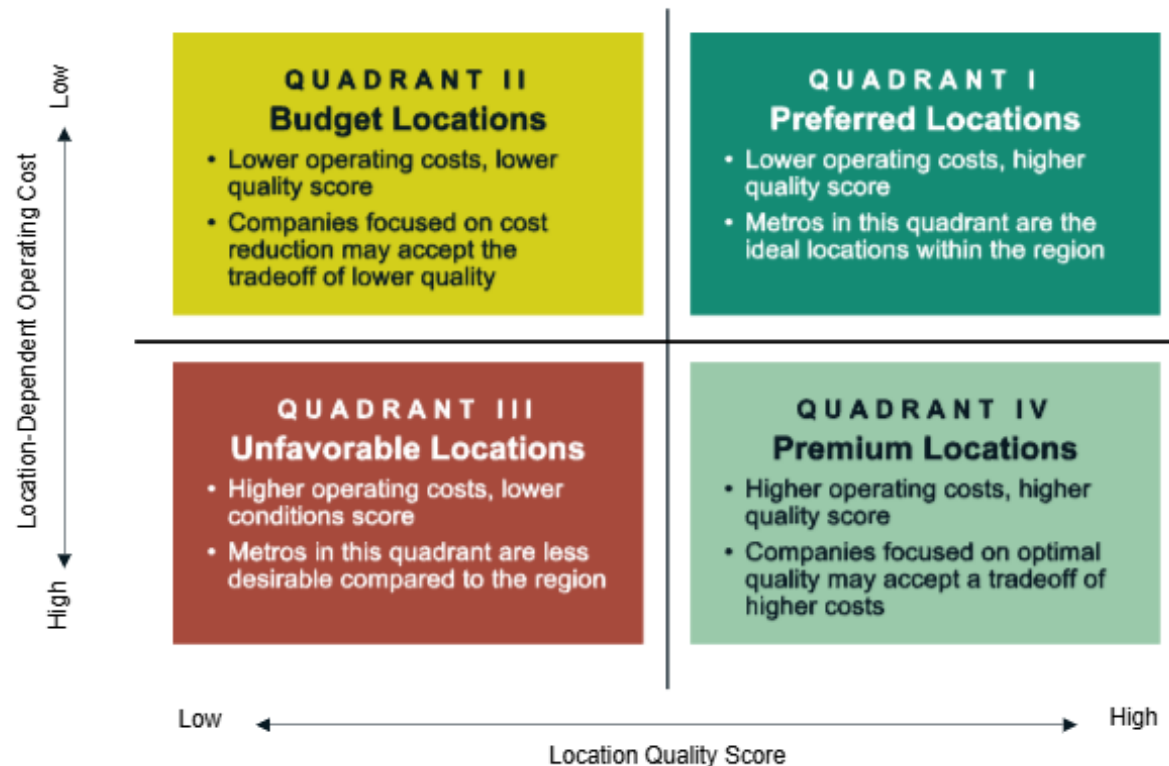
Madison ranks among the most cost-efficient metros within the top 20 locations for conditional scores, with total annual operating costs nearly 60% lower than top coastal hubs. Competitive labor, energy, and real estate costs make Madison an attractive location for biopharma R&D and pilot-scale operations seeking to maximize investment value.

Annual Operating Costs



Composite Results

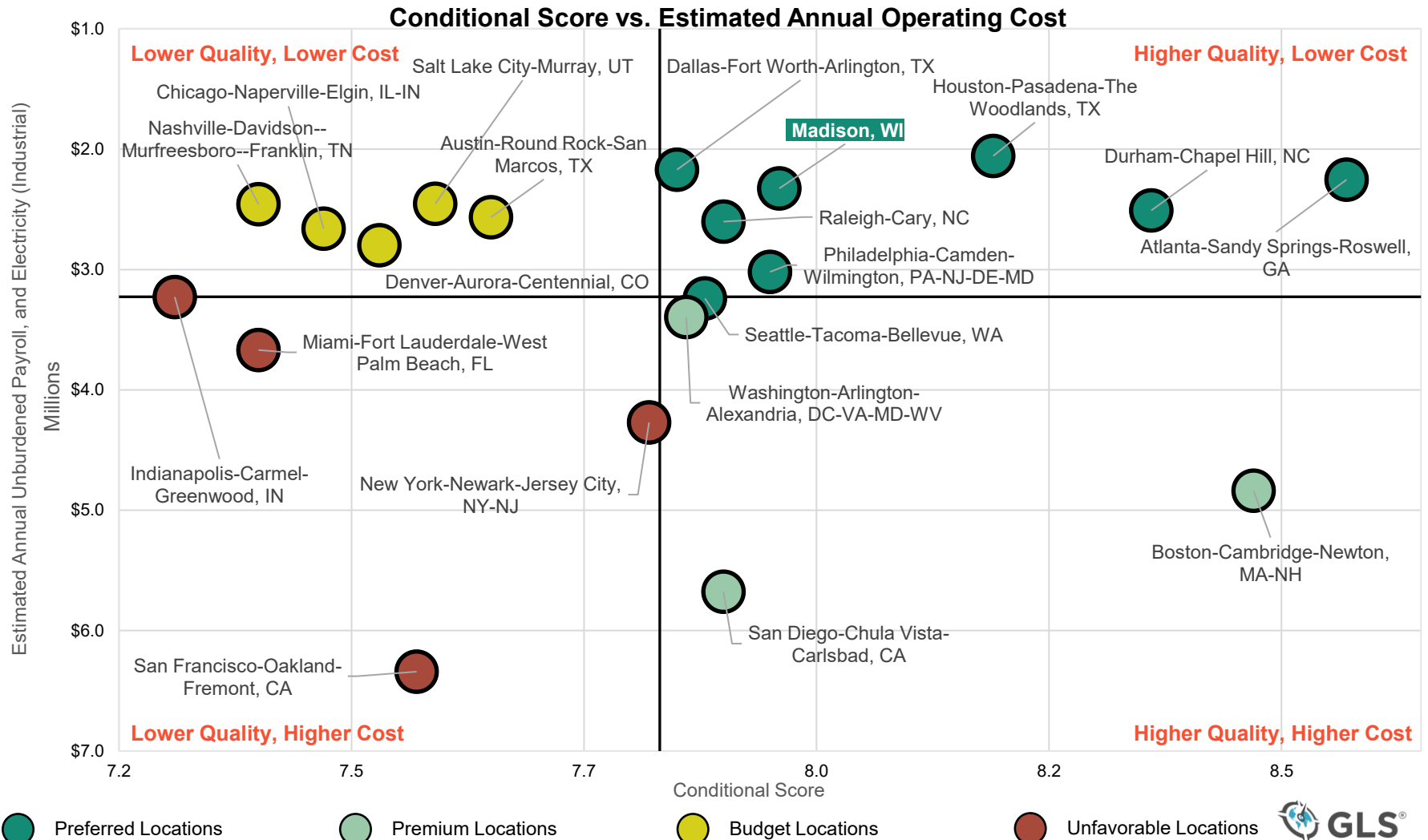
The composite analysis integrates location quality and operating cost performance to illustrate each metro's overall competitiveness. Locations are plotted across four quadrants, balancing qualitative strengths—such as innovation ecosystem and workforce depth—against quantitative cost factors. This framework highlights tradeoffs between cost efficiency and operational quality, allowing communities to be categorized as Preferred, Premium, Budget, or Unfavorable locations within the broader biopharma R&D landscape.



Composite Results

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The composite analysis plots each metro's location quality score against its estimated annual operating cost to reveal overall competitiveness. Markets in the upper-right quadrant—including Madison—offer the most favorable balance of high performance and cost efficiency, positioning them as Preferred Locations for biopharma R&D investment. Please note that the axes for this chart are dependent on the average conditional score and cost of the top 20 metros.





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Benchmarking Results: Sample Manufacturing Project

Project Profile

	Manufacturing Project
Client	Biopharmaceutical company producing commercial-scale biologics, biosimilars, or advanced therapies.
Primary Driver	- Reliable manufacturing capacity, quality compliance, and ability to scale with product demand. - More cost-sensitive than R&D projects.
Real Estate Needs	250,000—300,000 sq. ft. purpose-built facility. - Includes upstream/downstream suites, fill-finish, QA/QC labs, warehouse, utilities, and office space.
Jobs	250-300 employees across operations, QA/QC, engineering, supply chain, and support services.
Talent Focus	- Manufacturing technicians and operators. - QA/QC specialists (sterility, analytical testing, regulatory compliance). - Process engineers (upstream/downstream). - Facilities and utilities engineers.
Utility Requirements	<u>Power</u>: 12-15 MW, 75-85% load factor. <u>Natural Gas</u>: 40-60 mcf/hr (steam, sterilization, HVAC). <u>Water</u>: 150,000-200,000 GPD (WFI/RODI, clean stream). <u>Wastewater</u>: 12,000-15,000 GPD (with provisions for biologically active waste treatment).
Operations	24/6 to 24/7 schedule, depending on product mix and campaign scheduling. - Continuous operations for key utilities (HVAC, purified water, cold chain).
Capex	\$400-500M investment in facility buildout, process equipment, utilities, QC labs, and support infrastructure.

The project specs shown on the left represent a sample biopharma manufacturing project.

- **250,000-300,000 sq. ft. is standard scale:** Many new biopharma manufacturing facilities fall into this range, balancing production capacity with long-term flexibility.
- **Dedicated suites for upstream, downstream, and fill-finish:** Floor plans prioritize controlled environments for process campaigns, supported by QA/QC labs, warehouse, and utilities.
- **Workforce mix shifts toward operations:** Compared to R&D, a higher share of jobs are manufacturing operators, maintenance, and facilities staff, while still requiring QA/QC and process engineers.
- **Utility demand is intensive:** High, continuous loads for power, water, and active waste treatment are defining infrastructure requirements.
- **Round-the-clock operations:** Facilities often run 24/6 or 24/7, with continuous operation of critical systems like HVAC, cold chain, and purified water.
- **Significant Capex:** Investments reflect not only the building itself but also specialized equipment, compliance systems, and support infrastructure.

Representative Projects

Project / Facility	Approx. Scale / Key Specs	Notes
Genentech – Holly Springs, NC	~700,000 sq ft, \$700M investment, ~420 jobs (NCBiotech)	Large-scale fill/finish biologics facility, significantly above the benchmark range in both size and investment. Illustrates major U.S. expansion trends and workforce requirements for end-stage biologics manufacturing.
Bristol Myers Squibb – Dublin, Ireland (LSCC Facility)	~232,000 sq ft (21,570 m ²) large-scale biologics manufacturing (Jacobs)	Well-aligned with the benchmark profile; includes full upstream and downstream suites, QC labs, and buffer/media preparation areas. Strong example of an integrated mid-scale biologics manufacturing operation.
Alnylam – Norton, MA	~205,000 sq ft process & GMP facility (Gilbane)	Close comparator to the benchmark project in both size and function. Features GMP production, utilities, QC, and administrative space suitable for commercial or late-stage manufacturing.
Merck – Wilmington, DE Biologics Center of Excellence	\$1B investment, new large-scale biologics campus (Merck)	Considerably larger than the benchmark project but highlights long-term scalability and flexible design principles applicable to future biologics campuses.
BeiGene – Hopewell, NJ	~400,000 sq ft biologics + R&D campus (BioPharmaBoardroom)	Integrated biologics R&D and manufacturing campus exceeding benchmark scale. Demonstrates the convergence of research and production within a single site.
Prestige Biologics – Osong, South Korea	~54,000 m ² (~581,000 sq ft) across multiple plants, ~154,000L bioreactor capacity (Prestige Biologics)	CDMO-oriented, high-capacity biologics complex with bioreactor capacity far beyond the benchmark model. Useful for illustrating global competitiveness and large-scale production infrastructure.
Samsung Biologics – Bio Campus II	Plant 5 & 6 with 180kL capacity each, part of multi-plant campus (Samsung Biologics)	Represents the “mega-scale” end of the spectrum, with multiple large-volume plants and advanced automation. Provides insight into global best practices for modularity and efficiency.

Top Performing Locations

Ranking	Manufacturing
1	Raleigh-Cary, NC
2	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD
3	Indianapolis-Carmel-Greenwood, IN
4	Durham-Chapel Hill, NC
5	Houston-Pasadena-The Woodlands, TX
6	Atlanta-Sandy Springs-Roswell, GA
7	Dallas-Fort Worth-Arlington, TX
8	Madison, WI
9	Chicago-Naperville-Elgin, IL-IN
10	Nashville-Davidson--Murfreesboro--Franklin, TN
11	Seattle-Tacoma-Bellevue, WA
12	Denver-Aurora-Centennial, CO
13	Boston-Cambridge-Newton, MA-NH
14	Charleston-North Charleston, SC
15	Salt Lake City-Murray, UT
16	Austin-Round Rock-San Marcos, TX
17	Charlotte-Concord-Gastonia, NC-SC
18	Miami-Fort Lauderdale-West Palm Beach, FL
19	New York-Newark-Jersey City, NY-NJ
20	Washington-Arlington-Alexandria, DC-VA-MD-WV

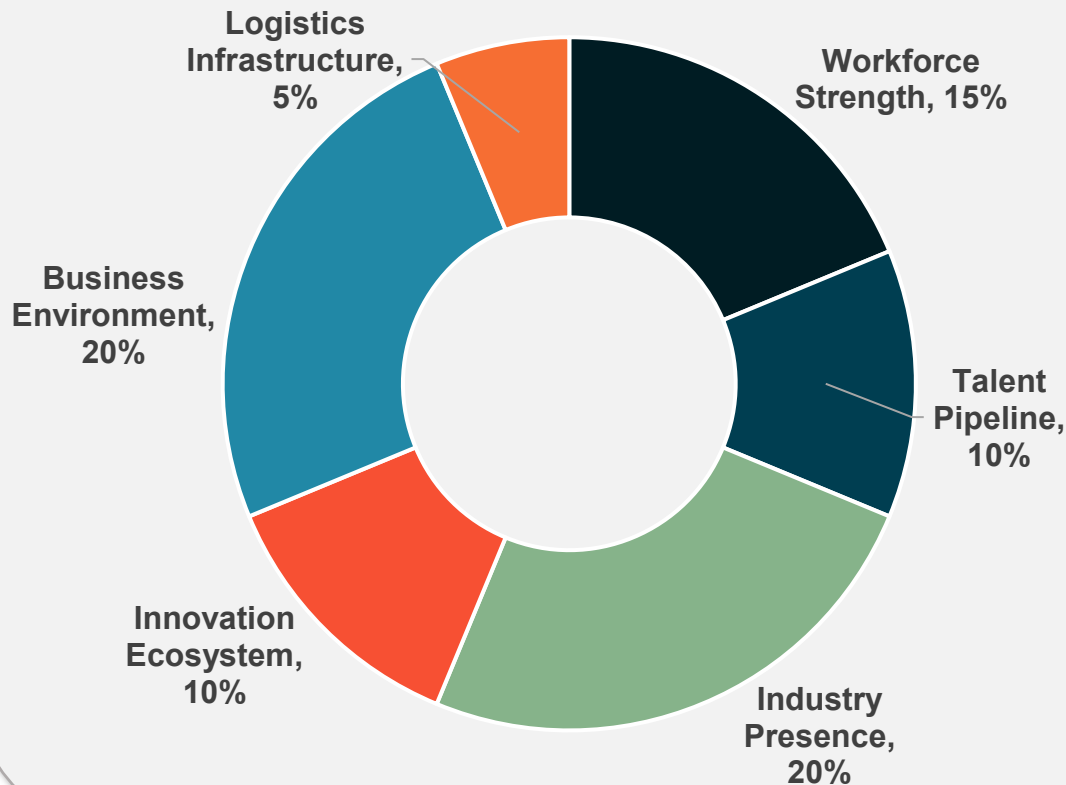
Madison ranks #8 nationally among top-performing biopharma manufacturing locations, positioning it within the second tier of U.S. production hubs. This standing highlights the region's capacity to support large-scale biologics and pharmaceutical manufacturing through its strong workforce base, cost-effective operating conditions, and connection to Wisconsin's broader life sciences ecosystem. While leading metros such as Raleigh-Durham, Philadelphia, and Houston dominate in total industry scale, Madison's advantage lies in its balance of quality, reliability, and cost efficiency—making it well-suited for advanced manufacturing and process development investments.

Key Takeaways

- **Manufacturing Competitiveness:** Madison ranks within the national top 10, outperforming larger industrial markets such as Nashville, Denver, and Boston in cost-adjusted competitiveness. Its manufacturing-ready infrastructure and skilled labor base reinforce its strength in biopharma production.
- **Workforce + Technical Talent:** The region benefits from a deep pool of technicians, process engineers, and QA/QC professionals, supported by the state's strong technical college system and university-linked training programs.
- **Operational Efficiency:** Lower labor, utility, and lease costs provide a significant operating advantage compared to top-tier coastal metros, enabling cost-effective scaling of production capacity.
- **Growth Opportunity:** Madison's smaller base of large-scale biologics producers presents room for expansion—particularly among CDMOs and manufacturers seeking a reliable, mid-cost Midwest location with access to research expertise and robust infrastructure.

Primary Criteria

Location Quality Primary Criteria



Overview

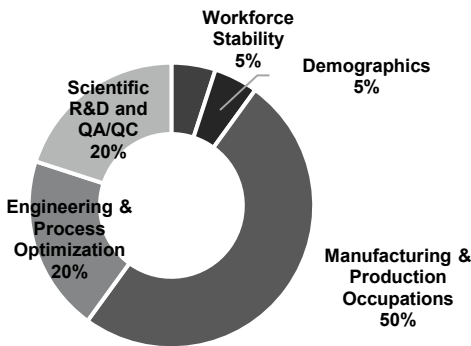
The Manufacturing benchmarking model evaluates each metro's competitiveness across seven weighted factors that reflect the key drivers of biopharma manufacturing location decisions.

- **Innovation Ecosystem (10%)** – Proximity to research institutions and technology partners supporting process innovation, product development, and applied manufacturing science.
- **Industry Presence (20%)** – Concentration of biomanufacturing firms, suppliers, and related industries that reinforce supply chain depth and operational reliability.
- **Talent Pipeline (10%)** – Educational and technical programs that produce skilled operators, engineers, and quality professionals to meet evolving industry needs.
- **Workforce Strength (15%)** – Availability and specialization of production workers, QA/QC staff, and technical trades, coupled with competitive wage conditions.
- **Business Environment (20%)** – Cost structure, incentives, and regulatory climate.
- **Logistics Infrastructure (5%)** – Connectivity through airports, highways, and freight.
- **Quality of Life (5%)** – Livability and amenities that attract and retain talent.

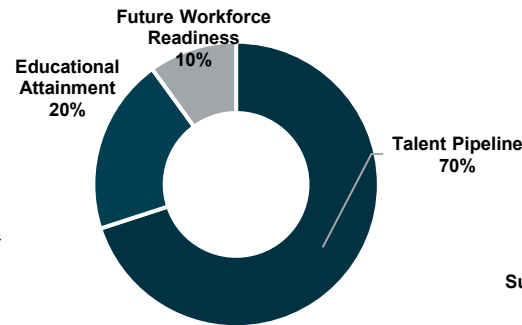
Secondary Criteria

Each primary category is supported by detailed secondary metrics that capture the underlying conditions influencing biopharma manufacturing competitiveness. These factors evaluate workforce specialization, academic and industry linkages, infrastructure quality, and overall operating environment—providing a comprehensive, data-driven view of how each metro performs beyond headline indicators.

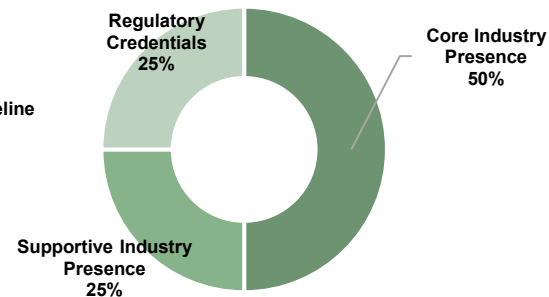
Workforce Strengths



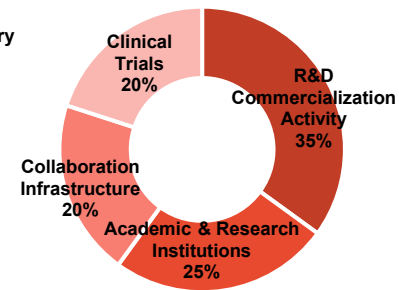
Talent Pipeline



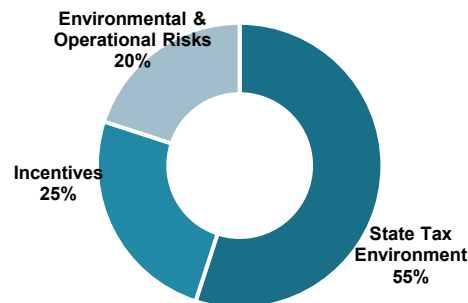
Industry Presence



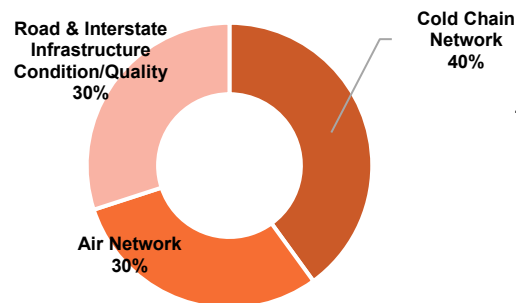
Innovation Ecosystem



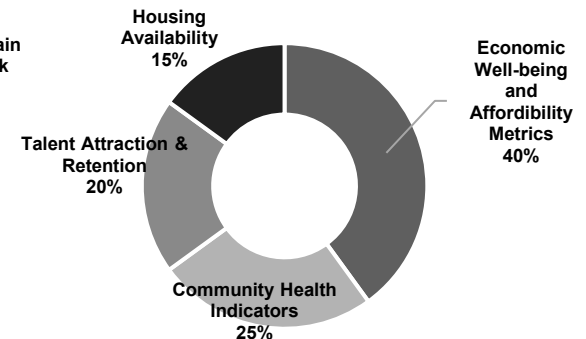
Business Environment



Logistics Infrastructure



Quality of Life

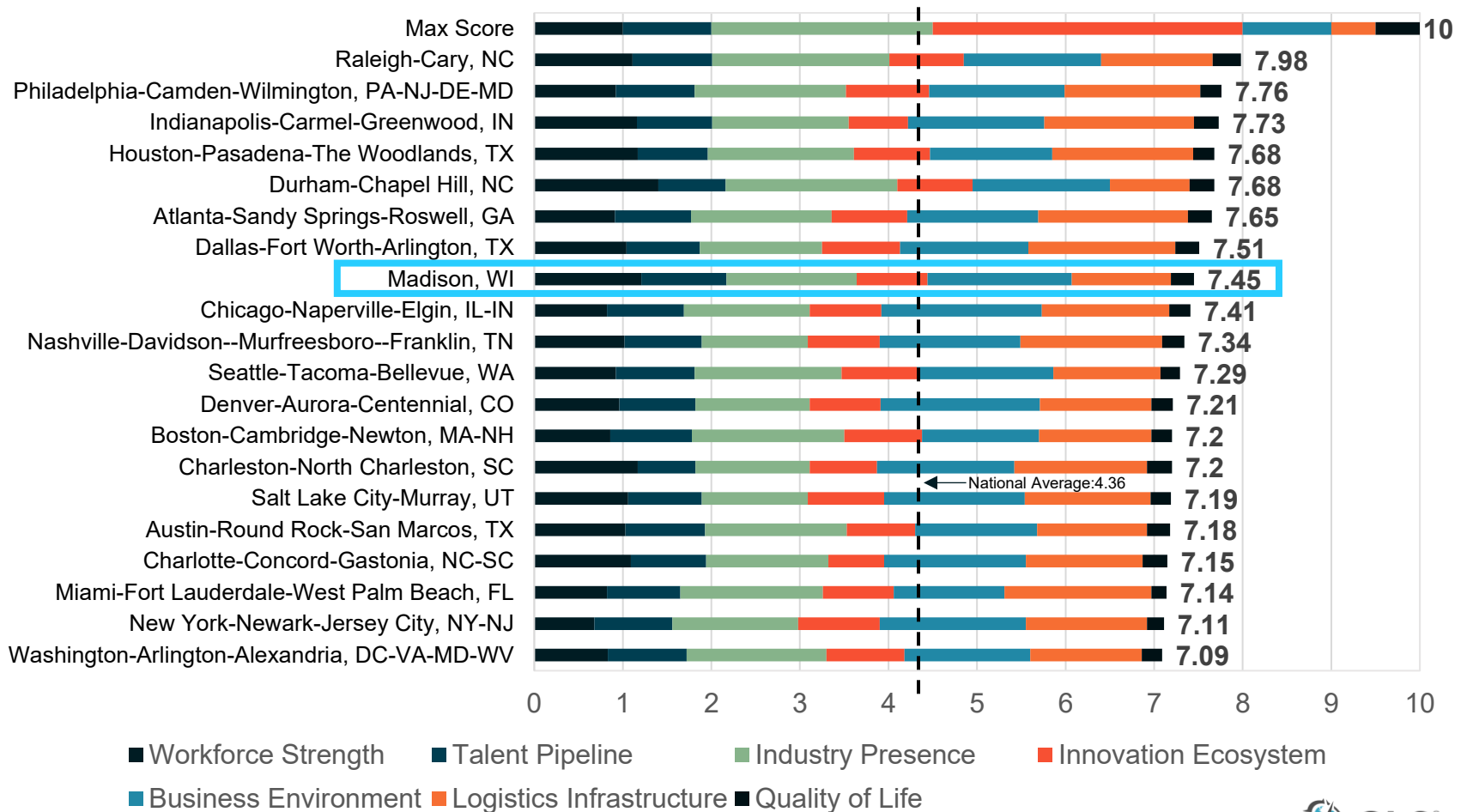


Conditional Scores

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The conditional analysis compares how each metro performs across all weighted factors in the Manufacturing model. Madison ranks #8 nationally, driven by strong scores in workforce strength, business environment, and industry presence while maintaining competitive operating conditions relative to larger coastal hubs.

Conditional Analysis- Top 20

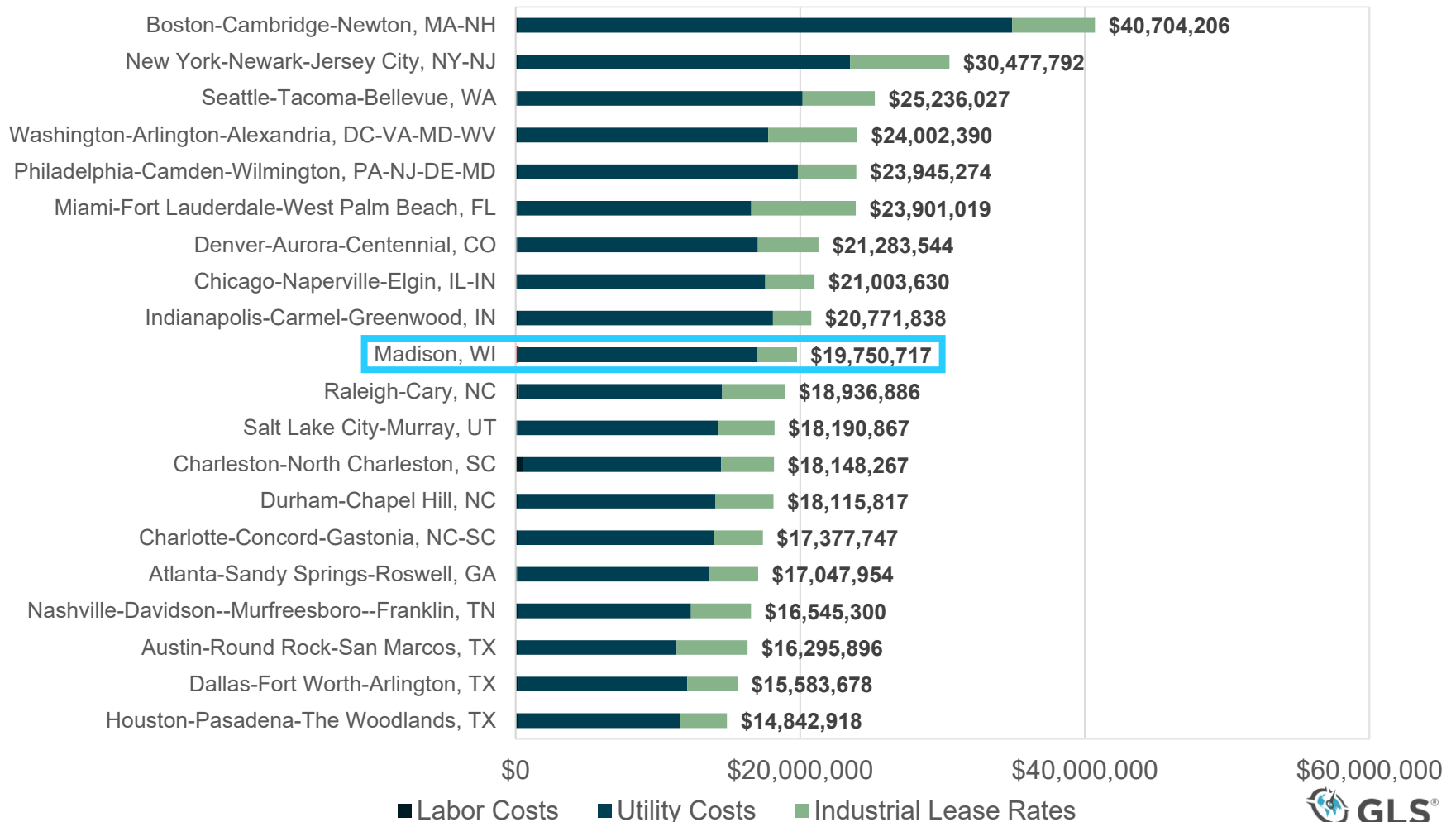


Annual Operating Costs

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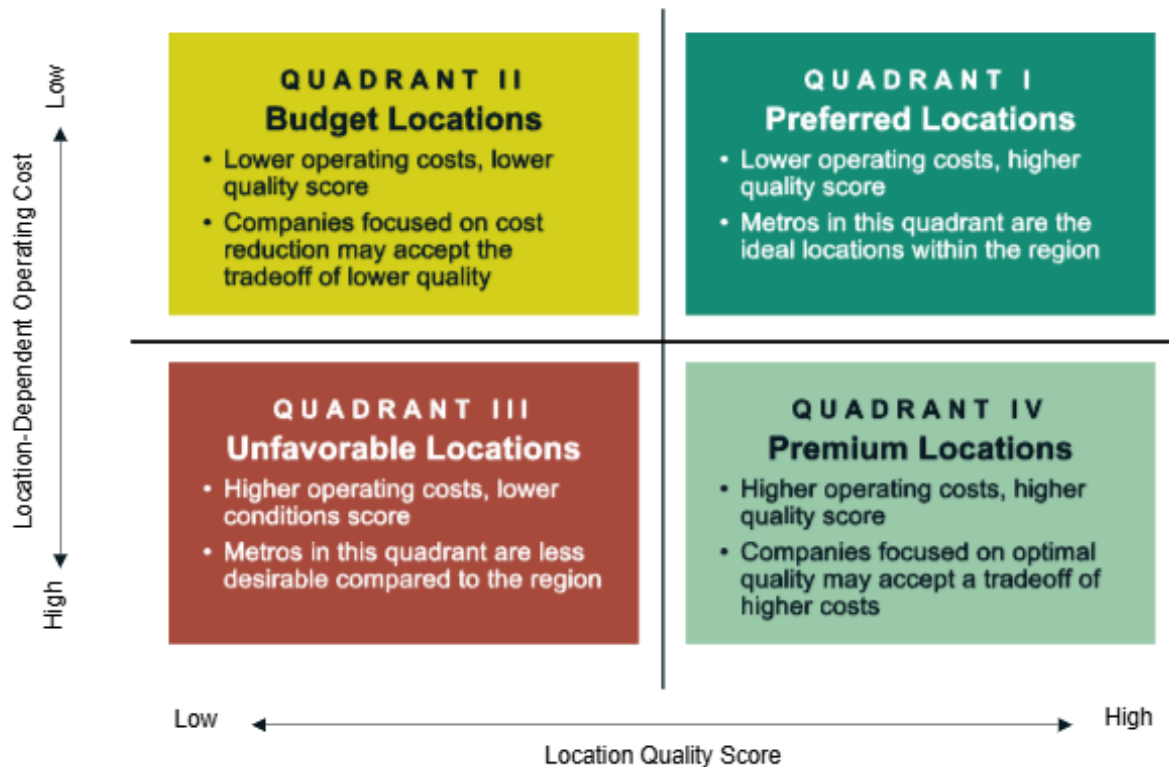
Madison ranks among the middle of metros for cost-efficiency within the top 20 locations by conditional scores, with total annual operating costs nearly 50% lower than top coastal hubs. Competitive labor, energy, and real estate costs make Madison an attractive location for biopharma manufacturing and pilot-scale operations seeking to maximize investment value.

Annual Operating Costs



Composite Results

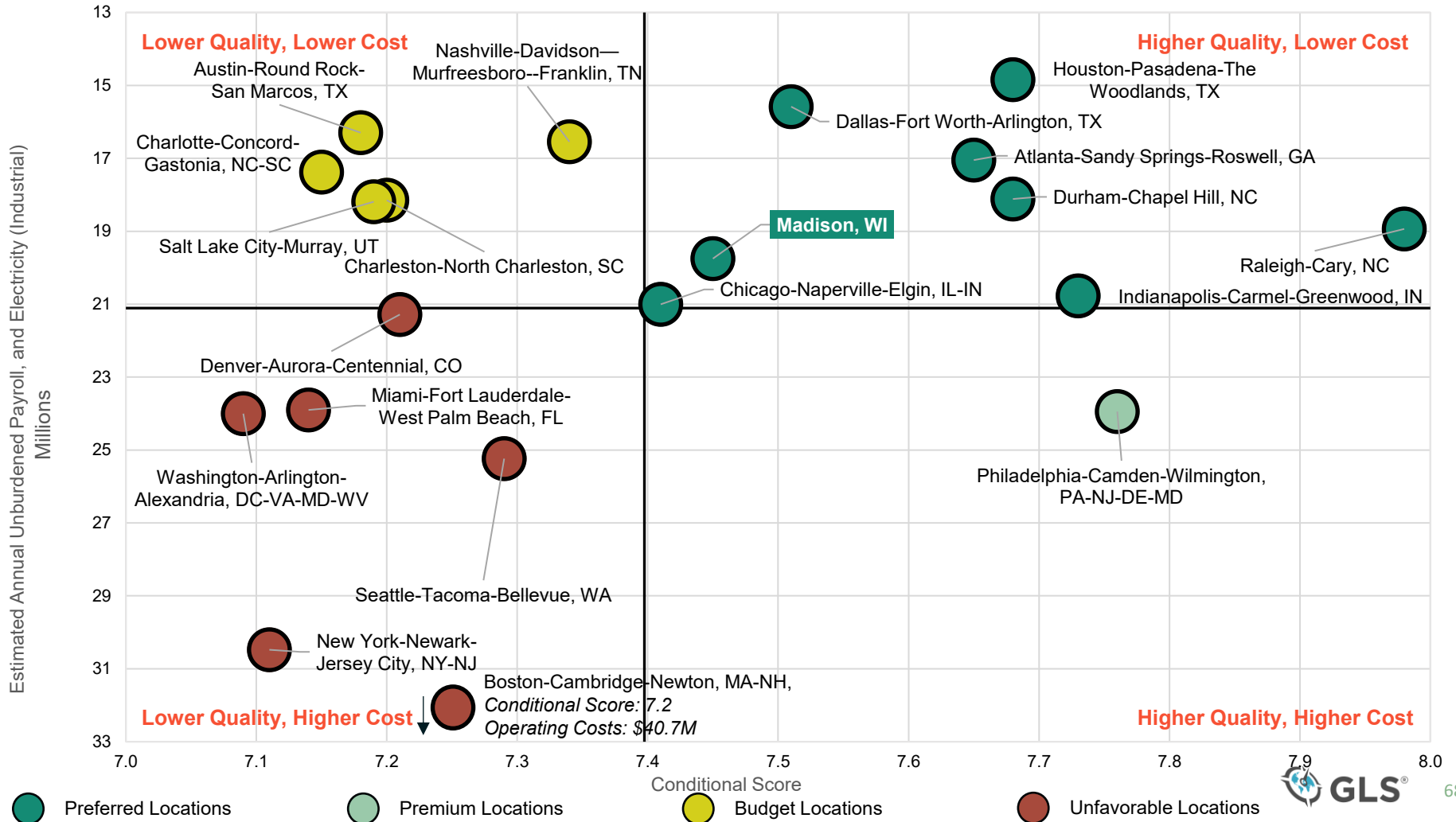
The composite analysis integrates location quality and operating cost performance to illustrate each metro's overall competitiveness. Locations are plotted across four quadrants, balancing qualitative strengths—such as innovation ecosystem and workforce depth—against quantitative cost factors. This framework highlights tradeoffs between cost efficiency and operational quality, allowing communities to be categorized as Preferred, Premium, Budget, or Unfavorable locations within the broader biopharma manufacturing landscape.



Composite Results

The composite analysis plots each metro's location quality score against its estimated annual operating cost to reveal overall competitiveness. Markets in the upper-right quadrant- including Madison- offer the most favorable balance of high performance and cost efficiency, positioning them as Preferred Locations for biopharma manufacturing investment. Please note that the axes for this chart are dependent on the average conditional score and cost of the top 20 metros.

Conditional Score vs. Estimated Annual Operating Cost





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Spotlight on Top Metros

Top Metros By Model

Overview

The benchmarking models highlight metros that lead the nation in biopharma R&D and manufacturing competitiveness. While each model emphasizes distinct drivers—innovation capacity versus production scalability—there is notable overlap among the highest-performing regions, reflecting interconnected ecosystems that support both research and production activity.

Key Insights

- Raleigh-Cary/Durham-Chapel Hill and Philadelphia-Camden-Wilmington rank within the top five for both R&D and manufacturing, reflecting balanced ecosystems that support both early-stage innovation and large-scale production.
- San Diego-Carlsbad and Houston-Pasadena-The Woodlands illustrate how regional specialization influences competitiveness—San Diego excels in discovery and innovation, while Houston is emerging as a cost-effective biomanufacturing hub.
- Madison ranks within the top ten in both models, underscoring its ability to compete with far larger metros. Its strong academic foundation, innovation ecosystem, and cost efficiency position it as a rising player in the national biopharma landscape, particularly for R&D and manufacturing investments.

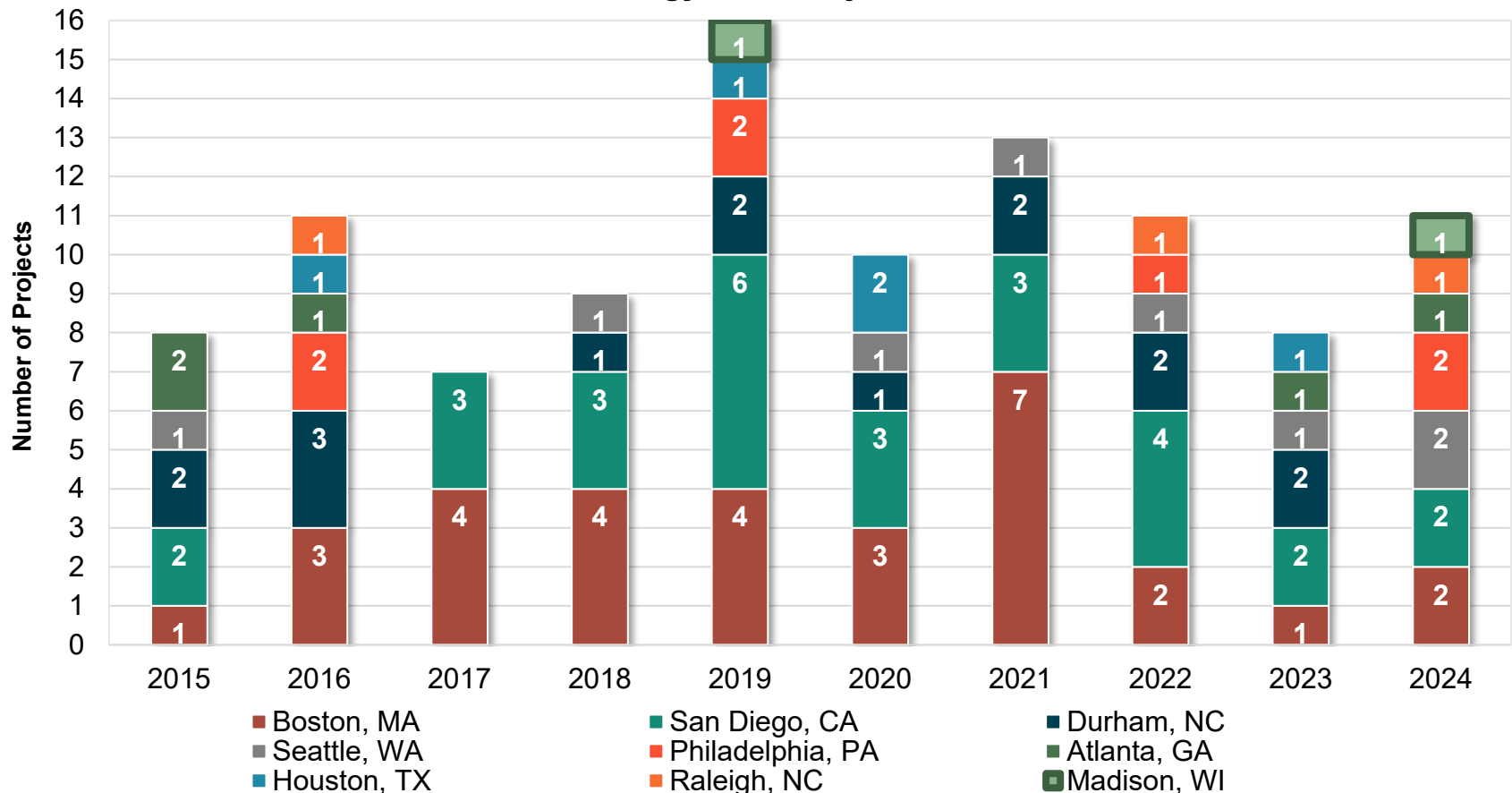
#	R&D	Manufacturing
1	Raleigh-Cary, NC	Raleigh-Cary, NC
2	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD
3	Durham-Chapel Hill, NC	Indianapolis-Carmel-Greenwood, IN
4	Boston-Cambridge-Newton, MA-NH	Durham-Chapel Hill, NC
5	San Diego-Chula Vista-Carlsbad, CA	Houston-Pasadena-The Woodlands, TX
6	Houston-Pasadena-The Woodlands, TX	Atlanta-Sandy Springs-Roswell, GA
7	Washington-Arlington-Alexandria, DC-VA-MD-WV	Dallas-Fort Worth-Arlington, TX
8	Atlanta-Sandy Springs-Roswell, GA	Madison, WI
9	Madison, WI	Chicago-Naperville-Elgin, IL-IN
10	Seattle-Tacoma-Bellevue, WA	Nashville-Davidson-Murfreesboro-Franklin, TN

R&D Project Trends

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Over the past decade, biopharma R&D investment has been heavily concentrated in major innovation markets such as Boston, San Diego, Raleigh–Durham, and Philadelphia. These metros continue to attract the bulk of new foreign direct investment (FDI) in biotechnology research facilities due to their established ecosystems and global visibility. Madison, WI, with two recorded R&D projects over the same period, demonstrates emerging traction within this national context—placing it in line with several top-ranked metros for research quality and industry presence. Continued visibility and project support efforts could help position Madison for greater R&D investment capture moving forward.

FDI Biotechnology R&D Projects, 2015-2024

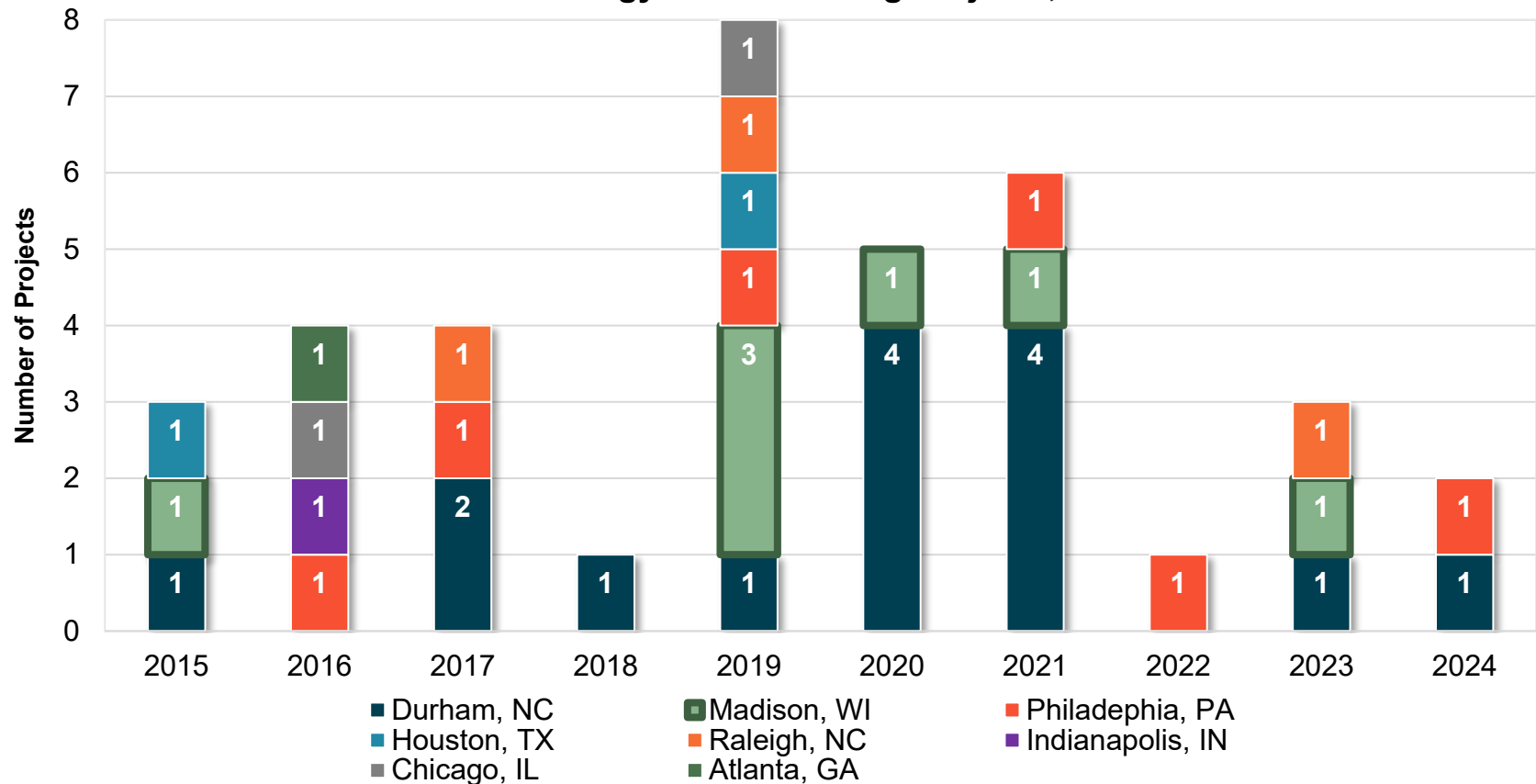


*In the last 10 years, there were no R&D projects listed for Seattle, WA on fDi Markets.

Manufacturing Project Trends

Over the past decade, biopharma manufacturing investment has been more geographically distributed than R&D activity, reflecting the importance of operating costs, logistics, and workforce scalability. Madison, WI ranks among the most active secondary markets, recording one of the highest numbers of biotechnology manufacturing projects nationwide. This consistent project activity—despite Madison’s smaller overall market size—reinforces its competitiveness in areas such as affordability, utility infrastructure, and workforce stability. While larger metros like Durham, Philadelphia, and Houston continue to dominate at scale, Madison’s sustained performance signals strong fundamentals for future biomanufacturing growth.

FDI Biotechnology Manufacturing Projects, 2015-2024



*In the last 10 years, there were no Manufacturing projects listed for Dallas, TX and Nashville, TN on fDi Markets.



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Economic Development Competitiveness

Economic Development Competitiveness

Overview

The benchmarking analysis identifies metros that are most competitive based on measurable factors—such as workforce, industry presence, and operating costs. By these indicators, Madison performs strongly and is likely to attract attention from biopharma companies during initial site screenings.

However, **landing projects requires more than strong desktop fundamentals**. Once a region makes the shortlist, elements like permitting efficiency, site readiness, incentive responsiveness, and the presence of specialized bio teams become decisive. These factors determine how confident a company feels in its ability to execute—shaping perceptions of project risk, timing, and local partnership strength.

In other words, factors typically considered during desktop benchmarking are likely to help Madison get companies to the door, but these additional factors will help the region get them across the threshold. The comparison on the next slide evaluates Madison and the top five metros across both models through this lens, highlighting where strengths can be leveraged and where gaps may limit project conversion.

Permitting
Efficiency



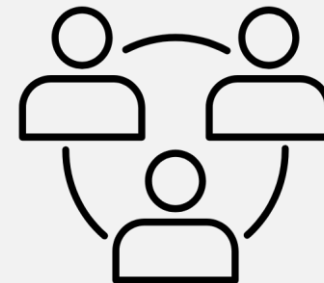
Site
Readiness



Targeted
Incentives



Specialized
Bio Team



Economic Development Competitiveness

Metro	Permitting Environment	Site Readiness	Incentives	Specialized Bio Team
Madison, WI	Strengths: - Predictable, transparent permitting processes with collaborative city and state agencies. - Strong track record in advanced manufacturing and R&D facility approvals. Gaps / Challenges: - Limited experience with large-scale biomanufacturing compared to metros that process multiple 500,000+ sq. ft. projects annually (e.g., Raleigh Durham metro). - Environmental and wastewater permitting for biologically active operations can require longer review timelines than in more industrially accustomed regions.	Strengths: - Expanding inventory of industrial parks and sites with utilities and infrastructure in place (e.g., Alliant Energy Ready Sites). Gaps / Challenges: - Few large, life-sciences-ready sites with proper zoning, infrastructure, and appropriate buffers. - Limited availability of spec or shell lab / biomanufacturing buildings compared to established bio clusters. - Some sites may face longer development lead times due to utility capacity, grading, or other technical site requirements.	Strengths: - Strong state incentive toolkit through WEDC (Jobs Tax Credit, Enterprise Zone Credits) - Local governments are increasingly open to performance-based incentives. Gaps / Challenges: - Less aggressive discretionary incentives than peer states like North Carolina or Indiana. - Fewer bio-specific programs (e.g., no dedicated life sciences investment fund or infrastructure grant program).	Strengths: - BioForward provides strong advocacy, branding, and industry engagement. - University of Wisconsin-Madison drives credibility and R&D connectivity. Gaps / Challenges: - No fully integrated “one-stop” life sciences business development team spanning utilities, state agencies, and regional partners (like NC Biotech or MassBio).
Raleigh-Cary, NC Durham-Chapel Hill, NC	Streamlined, business-friendly permitting with clear timelines; strong local experience in biotech projects.	Multiple certified biomanufacturing sites with utilities in place near existing pharma clusters.	Competitive discretionary incentives through JDIG and OneNC tailored to large-scale biomanufacturing.	Highly integrated ecosystem anchored by the NC Biotechnology Center and university partnerships.
Boston-Cambridge-Newton, MA-NH	Complex multi-state permitting structure but supported by seasoned agencies experienced in large-scale life sciences investments.	Dense cluster of lab-ready redevelopment sites but limited large greenfield capacity.	Moderate state and local programs supplemented by Mass Life Sciences Center grants..	Global leadership in biotech collaboration through MassBio and major research institutions.
San Diego-Chula Vista- Carlsbad, CA	Predictable local review processes shaped by decades of biotech development.	Strong R&D real estate base in Torrey Pines and Sorrento Valley; limited space for large-scale production.	Selective state-level tax credits and local biotech support but minimal discretionary tools.	Biocom California and UC San Diego drive innovation and industry connectivity.
Indianapolis-Carmel-Greenwood, IN	Streamlined, business-friendly permitting for industrial and R&D facilities.	Extensive industrial parks with utility capacity but few GMP-ready life sciences sites.	Flexible EDGE and IEDC programs responsive to high-capex biomanufacturing projects.	BioCrossroads coordinates statewide life sciences workforce and cluster development.
Houston-Pasadena-The Woodlands, TX	Fast, pro-business permitting with strong industrial zoning flexibility.	Significant industrial land supply but limited purpose-built life sciences infrastructure.	State Enterprise Fund and local abatements widely used; emphasis on long-term investment partnerships.	Emerging specialization in biomanufacturing through Greater Houston Partnership and innovation districts.



ALLIANT ENERGY + BIOFORWARD

Conclusion

Conclusion + Recommendations

Overview

Madison ranks among the nation's most balanced emerging biopharma markets—combining a world-class research base, specialized talent, and a growing manufacturing footprint. While smaller in scale than legacy coastal hubs, its cost structure, central location, and collaborative business environment make it exceptionally well-positioned for on-shoring and domestic expansion projects seeking reliability, affordability, and operational certainty.

Key Takeaways

- **Top-Tier Research Strength:** UW–Madison and its affiliated institutions sustain global credibility in genomics, oncology, and stem-cell science, anchoring a robust innovation ecosystem.
- **Integrated R&D + Manufacturing:** Madison's continuum of discovery through production positions it as a cost-efficient hub for scaling technologies within the U.S. supply chain.
- **Cost + Quality Advantage:** Operating costs remain 30–50% below coastal peers while maintaining one of the nation's highest concentrations of scientific and technical talent.
- **On-Shoring Opportunity:** Growing federal and corporate focus on domestic biomanufacturing aligns with Madison's strengths—ample land, stable infrastructure, and a supportive state policy environment.
- **Momentum + Recognition:** Recent expansions by firms such as Eli Lilly, Catalent, and Exact Sciences, reinforce Madison's credibility as a U.S. biohealth leader.

Strengthen What Works

- **Deepen Workforce Pipelines:** Expand biohealth career pathways and strengthen alignment between technical colleges and industry needs.
- **Accelerate Site Readiness:** Advance utilities-served, biomanufacturing-ready sites to support projects under tight development timelines.
- **Market the Full Value Chain:** Emphasize Madison's ability to host both innovation and production functions in a single, cohesive ecosystem.

Close Remaining Gaps

- **Enhance Project Responsiveness:** Develop a coordinated “bio-ready” project response team to streamline permitting and incentive packaging.
- **Increase Visibility:** Target national campaigns around on-shoring, supply chain resilience, and sustainable manufacturing to elevate Madison's profile.
- **Expand Incentive Flexibility:** Explore discretionary tools and infrastructure support mechanisms tailored to large-scale biomanufacturing investments.

Outlook

Outlook

Madison's foundation in research excellence, technical workforce, and cost competitiveness positions it as an ideal on-shoring destination for biopharma and life sciences manufacturing. By pairing its quantitative strengths with improved responsiveness and site readiness, Madison can convert competitive interest into long-term, capital-intensive investment wins.

- The U.S. biopharma sector continues to consolidate into fewer, larger, more capital-intensive projects—favoring states like Wisconsin that can offer affordability, reliability, and ecosystem depth.
- Wisconsin's growing roster of anchor companies signal enduring momentum and investor confidence.
- The Madison MSA is highly competitive for both R&D and Manufacturing projects within the industry, so it is crucial that state and local resources are leveraged to maximize economic development competitiveness to convert leads into wins.
- Continued alignment among Alliant Energy, BioForward, WEDC, and research institutions will be essential to sustaining growth and ensuring Wisconsin remains a premier destination for biohealth investment.



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