LA County's Life Sciences Industry Cluster Strategy and Action Plan

Dalberg

department of economic opportunity
COUNTY OF LOS ANGELES

A PATH TO 10,000 NEW LIFE SCIENCES JOBS IN THE LA REGION BY 2030

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Letter From the Advisory Board:

To Our Los Angeles County Community, Stakeholders, and Partners,

We are proud to introduce the **Los Angeles County Life Sciences Industry Cluster Strategy and Action Plan for 2025 to 2030.** This bold and inclusive roadmap reflects a shared commitment to position our region as a global leader in life sciences innovation, economic opportunity, and community impact.

Los Angeles County is already a powerful force in the life sciences. It is home to world-class research institutions, leading hospitals, innovative corporate leaders, and a globally diverse, and highly skilled talent base. It is the base for major life sciences companies, along with a fast-growing ecosystem of startups and technology firms that are redefining the industry. The region consistently ranks as a top cluster for intellectual property creation and patent generation. This unique convergence of science, technology, and talent makes Los Angeles County one of the most dynamic national and global regions for life sciences innovation and growth.

This strategy focuses on sectors where Los Angeles County is well positioned for inclusive growth at scale. These include biopharmaceutical research and development, medical devices, the convergence of life sciences with artificial intelligence, and the expansion of advanced life sciences manufacturing. Together, these sectors represent the future growth of the industry and are critical to building a resilient, inclusive, and innovation-driven economy. By leveraging our strengths in these fields, the region has the potential to become a national and international benchmark for life sciences excellence.

Over the next five years, the strategy aims to create 10,000 new life sciences jobs across the region, including 4,000 within Los Angeles County. This is not only a workforce development goal but also a commitment to opening real career pathways for Angelenos from every background. Today, nearly 60% of life sciences jobs in the region currently do not require a four-year degree while also offering a living wage. That makes this sector a powerful engine of upward mobility, particularly for communities that have long been underrepresented in the innovation economy. The plan embraces this opportunity by prioritizing inclusive access to meaningful and well-paying careers.

What distinguishes this strategy from past studies is its highly focused and actionable approach, developed through a deeply participatory process that engaged over 130 stakeholders. Instead of a comprehensive list of recommendations, this plan identifies a short list of the most binding constraints to growth and outlines a few specific actions that our Department of Economic Opportunity can lead, in partnership with industry, to truly move the needle. This brings a strong equity lens to the forefront, ensuring our efforts are aimed not just at top-line growth but at fostering inclusive opportunities for individuals and communities that have traditionally lacked pathways into life sciences entrepreneurship and careers.

To realize its full potential, we must address several persistent challenges that have limited growth. These include a shortage of specialized lab and manufacturing space, complex business permitting processes, and limited access to early-stage capital. This strategy offers practical solutions to each of these barriers. It outlines plans to add more than 100,000 square feet of new life sciences facilities, improve permitting processes, strengthen commercialization support, and expand workforce development programs to prepare a diverse pipeline of talent. These actions will help create the conditions necessary for sustained innovation and inclusive growth.

As members of the Life Sciences Advisory Board, we have worked in partnership with leaders from industry, government, academia, workforce programs, and community-based organizations to shape this strategy. We believe that this is more than a strategic plan, rather it is a collective vision. Together, we will strengthen our region's mark as a global home for life sciences where opportunity, innovation, and impact are shared by all.

Sincerely,
The Los Angeles County Life Sciences Advisory Board

- **Kelly LoBianco** (co-chair), Director, LA County DEO
- **Dan Gober** (co-chair), Executive Director, Biocom California
- **Amir Naiberg,** Associate Vice Chancellor, UCLA Technology Development Group
- **Carolyn Hull,** General Manager, City of LA Economic and Workforce Development Department
- **Dr. Chander Arora,** Biotech Program Director, Los Angeles Mission College
- **Howard Xu,** Director, LA BioSpace, California State University, Los Angeles
- **Jan Vogel,** Executive Director/CEO, South Bay Workforce Investment Board
- **Jim Lancaster,** Vice Chancellor, Los Angeles Community College District
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- **Pierre Kyme,** Chief Business Officer, Armata Pharmaceuticals
- **Rohit Shukla,** CEO, Larta Institute
- **Stephanie Hsieh,** Interim CEO, BioscienceLA
- **Stephen Cheung,** President and CEO, Los Angeles County Economic Development Corporation
- **Steven Weinstein,** Head of Manufacturing, Takeda

Report at a Glance

CONTEXT AND KEY FINDINGS

Life sciences is one of the most dynamic and high-impact industries in the world — driving medical breakthroughs, creating high-quality jobs, and expanding economic opportunity. Over the past decade, the U.S. life sciences industry has added more than 350,000 jobs, with average salaries exceeding $100,000.[1] As the industry continues to grow, Los Angeles (LA) County has the potential to become a global leader in life sciences, not only in research and innovation, but also as a destination for diverse founders, firms, and talent. At a moment where some of LA County's traditional industries are facing downward pressures, life sciences offer significant opportunities for inclusive economic development, innovation, and improved health outcomes across the region. This opportunity for inclusive growth was reaffirmed by a July 2022 Board Motion from Supervisor Holly J. Mitchell, which committed to expanding the life sciences industry and creating equitable high road career pathways that are accessible to residents across LA County. In the context of ongoing wildfire recovery and a shifting macroeconomic environment, it has only become more critical to deliver on these commitments and leverage the potential of life sciences to unlock sustainable futures for residents of LA County.

LA County has many of the foundational pieces needed for a thriving life sciences cluster, including globally recognized research institutions, a top-tier healthcare system, and a life sciences workforce that is more diverse than any other leading cluster in the country. Each year, the LA region produces more life sciences graduates than any other region in the U.S., supplying local firms with a quality, diverse life sciences workforce that is hard to find in other clusters. This is coupled with strong research productivity, as the LA region has one of the highest rates of intellectual capital development, measured by life sciences research expenditures, patents, and publications coming out of the region's world-class universities.

Yet, despite these advantages, LA County's life sciences cluster has yet to reach its full potential. Over the past decade, job growth in the sector was just 9%, lagging behind the national average of 28% and far behind established clusters like Boston, San Diego, and the Bay Area, as well as emerging clusters like New York, Chicago, and Houston, which collectively grew by an average of 65%. These regions have made intentional investments in building the infrastructure, talent, and business environment needed to fuel industry expansion. If LA County had kept pace with the national average, it would have created nearly **10,000 life sciences jobs** over the past decade, more than triple its actual job growth of ~3,250. If LA County had grown at the rate of leading peer regions, it would have created over 22,700 jobs over that same period.[2]

These jobs are more accessible and diverse than any other leading life sciences cluster, however the industry still has progress to make to represent the full diversity of LA County. Nearly 60% of LA County's life sciences jobs do not require a four-year degree, creating accessible entry points into the industry for workers.

1. [a] Dalberg analysis based on BLS data. [b] BLS.gov, 2023.
2. Dalberg analysis of BLS data.

The workforce is also more diverse than all peer regions except Houston — 37% of the workforce identifies as Hispanic or Black. However, despite leading its peers in racial diversity, LA County's life sciences workforce does not fully represent the region's broader population. Hispanic Angelenos make up 49% of the general population but only 32% of the life sciences workforce, while Black Angelenos account for 9% of the population but just 5% of the workforce.[3] These gaps highlight ongoing barriers for diverse workers and founders in accessing pathways into the industry and the need to take active steps to enhance career opportunities for diverse residents while growing the region's workforce as the life sciences ecosystem expands in LA County.

Insufficient growth and inclusivity in the County's life sciences sector has been driven by a set of binding constraints that make it difficult for firms and talent to succeed in LA County. These constraints disproportionately impact diverse founders and talent.

A shortage of affordable, move-in-ready lab space, fragmented industry connectivity, complex zoning and permitting processes, and limited business retention and expansion support present barriers for life sciences firms to set up and grow in LA County. Additionally, an underrepresentation of diverse talent in higher degree programs, a shortage of locally available jobs, and lack of support geared to diverse founders and workers makes it difficult for diverse talent to enter and progress in the field. Other regions have taken aggressive action to address these challenges, with some investing over a billion dollars to create competitive ecosystems that retain, attract, and support life sciences firms and talent. In addition, there are inherent challenges to LA County that also impact life sciences industry workers and founders. These include social and financial factors like affordability, transportation, homelessness and commute times. In today's fiercely competitive global economy, it is critical that LA County make its own foundational investments to position the life sciences sector for sustainable, inclusive growth.

LA COUNTY'S LIFE SCIENCES INDUSTRY CLUSTER STRATEGY AND ACTION PLAN

The LA County Department of Economic Opportunity (DEO) commissioned Dalberg Advisors to develop a five-year Life Sciences Industry Cluster Strategy & Action Plan for the LA Region. DEO and Dalberg co-designed this Industry Cluster Strategy through significant engagement of the life sciences ecosystem, as well as review of available data, best practices and prior efforts, in order to identify actionable strategies needed to unlock the region's full potential for inclusive life sciences growth. As the County's economic development arm, DEO is well-positioned to lead, and co-lead in collaboration with other County agencies and industry partners, an intentional effort to advance inclusive growth in the County's life sciences industry. This strategy builds on past efforts, and focuses on a shortlist of catalytic, high-impact interventions needed to accelerate cluster growth, while ensuring that opportunities generated are accessible to all Angelenos.

The overarching ambition of the strategy is to build the foundational pieces of a thriving cluster that will enable LA County to catch up to the national industry average growth rate and cement our competitive advantage in a growing space both nationally and internationally. This would create ~10,000 new high-quality, inclusive life sciences jobs by 2030, with over ~4,000 of those in LA County.[4] The impact of this strategy would go beyond job growth, spurring greater collaboration and partnerships, creating opportunities for firm growth (including physical space), driving innovation, and bolstering workforce inclusivity. To realize this vision, DEO must work together with public and private sector partners in new ways to collectively advance the industry.

3. [a] Dalberg analysis of BLS data. [b] "2020 Census Demographic and Housing Characteristics File," U.S. Census, 2020. Stakeholder interviews, 2024.
4. This target is based on data from 2012-2023 and assumes relative stability between 2023 and 2024. It reflects reaching national average industry job growth, conservatively (20% discount) estimated at 10k; ~4K of these jobs would be located in LA County.

THE STRATEGY IS ORGANIZED AROUND FOUR PILLARS:

I **Alleviate physical space constraints by expanding affordable lab, manufacturing, and office space.** This includes adding 100,000+ square feet of new graduation-stage facilities for life sciences firms, as well as advancing broader zoning and permitting reform to remove unnecessary barriers to life sciences expansion. Addressing this gap will allow LA County to retain and grow more high-potential firms.

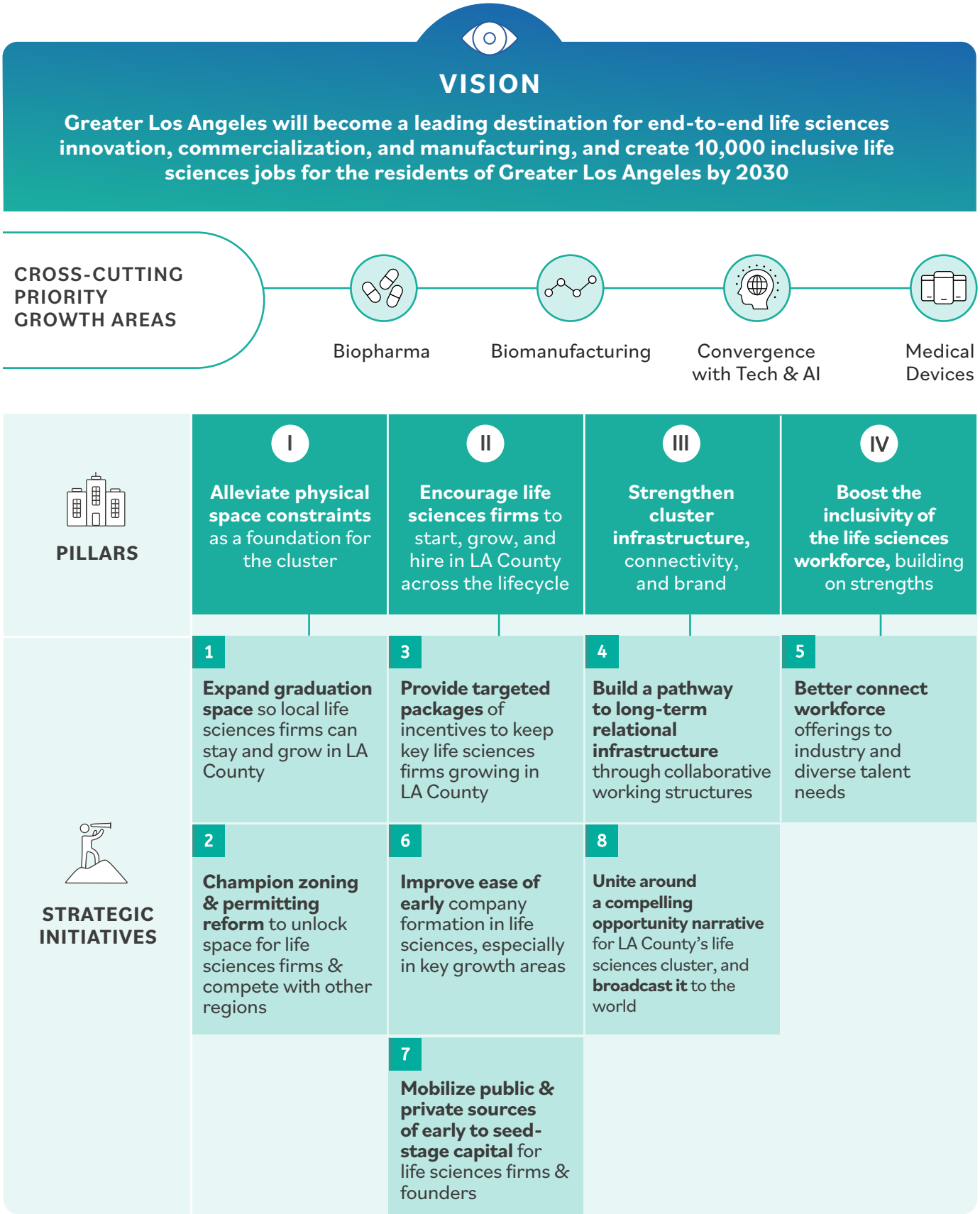
II **Encourage life sciences firms to start, grow, and hire locally by improving the business environment and providing competitive incentives.** This includes reducing regulatory bottlenecks, expanding financial and commercialization support, and prioritizing support for biomanufacturing firms that will add quality, inclusive jobs. This will increase early and growth stage firm retention, attract investment, and drive quality job growth.

III **Strengthen cluster connectivity and brand by fostering internal collaboration and external visibility.** This includes uniting government, industry, research institutions, and other stakeholders to improve coordination and craft a compelling brand for the region. A stronger regional identity will help to make LA County a globally recognized life sciences hub and attract major industry players, funding, and talent.

IV **Boost the inclusivity of LA County's life sciences workforce by expanding career pathways and aligning training programs with employer needs.** This includes creating more inclusive pathways into life sciences careers for those in disinvested communities. It also focuses on strengthening connections between industry and workforce to make the County's workforce more accessible to firms considering expanding operations in LA County.

Photo source: LA Department of Economic Opportunity

Figure 1: LA County Life Sciences Strategy[5]



5. The job target in the vision reflects reaching national average industry job growth, conservatively (20% discount) estimated at 10k; ~4K of these jobs would be located in LA County.

INVESTING IN LIFE SCIENCES

To execute this strategy successfully requires commitments in the form of capital and human resources, and consistent prioritization from County agencies and industry partners:

CAPITAL:

At least **$43.5M** is needed to implement the strategy. This should include **$5.8M** in existing funding to key initiatives, alongside at least **$37.7M** in new capital investment. This consists of:

- **$10M** for tenant improvement fund loans to build graduation space, including up to $5.8M in existing funding from the LA County Bioscience Loan Fund (see Action 1A)
- **$15M** in new funds for loans for multi-tenant graduation space (see Action 1B)
- **$200,000-$300,000** for a land use regulation consultant at LA County Department of Regional Planning (DRP) (see Action 2A)
- **$20M** in new funds for low-interest loans for biomanufacturing (see Action 3A)
- **$400,000** in new funds for workforce connectivity projects (see Action 5A and 5B)
- **$2M** in new funds for life sciences High Road Training Partnerships (HRTP)

HUMAN RESOURCES:

The County will need up to **4-6** full time staff to implement this strategy.

- DEO will need support from ~**3-5** full-time dedicated staff over various stages of strategy implementation. This will include but not be limited to internal capacity from:
  - » **The newly established Life Sciences Liaison,** who will spearhead the implementation of the strategy.
  - » **Additional support for the Life Sciences Liaison,** needed to help kick off and implement DEO-led initiatives.
  - » **A new Business Retention & Expansion (BRE)** Lead to coordinate proactive engagement in collaboration with other relevant agencies and industry actors to attract, retain, and grow key life sciences firms (this role would also expand to coordinate similar efforts in other industries over time).
  - » **Support from DEO's newly formed Capital Access team** to support the allocation and deployment of funds, loans, and incentives, including directly to eligible life sciences firms, as part of key strategic initiatives to grow the life sciences industry.
- DRP will require additional staffing capacity beyond their existing Life Sciences Permitting Liaison (**1.25** additional full-time staff) to design and advance zoning and permitting reform and provide tailored regulatory support to life sciences firms.
- Industry stakeholders will play a critical role in successfully implementing this strategy. This includes helping to shape strategic initiatives to ensure they meet industry needs by participating in DEO-facilitated working groups, leading or co-leading initiatives 6, 7, and 8, and bringing additional ideas, advocacy, and funding in support of growing the Life Sciences sector in LA County.

Figure 2: Strategy Goals, KPIs, and Investments

VISION LEVEL KPIs:

10,000 inclusive life sciences jobs will be added for the residents of Greater LA by 2030 to catch up to national growth rates for the life sciences industry. 4,000 of these will be in LA County.

PILLARS	I **Alleviate physical space constraints** as a foundation for the cluster	II **Encourage life sciences firms** to start, grow, and hire in LA County across the lifecycle	III **Strengthen cluster infrastructure,** connectivity, and brand	IV **Boost the inclusivity of the life sciences workforce,** building on strengths
ECOSYSTEM GOALS	Significantly increase construction of affordable life sciences space, stabilizing vacancy rates at or above 5%[a]	Grow the number of viable life sciences firms starting and staying in LA County at every growth stage and establish LA County as a biomanufacturing hub	Position LA County as a global life sciences leader, attracting and retaining anchor firms, large grants, and other critical elements of a thriving ecosystem	Ensure future job growth represents the diversity of LA County and strengthen connections between employers and LA County's leading life sciences workforce system
KPIs FOR DEO	**Firm growth:** **40-60** growth stage firms directly supported over five years with access to the physical space they need to stay and grow in LA County **Job growth:** **200-600** jobs added or retained **Physical space:** **130,000 -180,000** sq ft in physical space added for life sciences firms	**Firm growth:** **40+** life sciences firms benefit from Life Sciences Strategy actions that support them to reach the growth stage **Job growth:** **200-400** jobs added, with a focus on underrepresented communities	**Public perception:** **10** percentage point increase in public perception (internally and externally) of the LA County life sciences ecosystem **Cluster collaboration:** **200** ecosystem leaders actively engaged via working groups to grow the cluster[b]	**Workforce inclusivity:** **2,000+** individuals from underrepresented communities connected with pathways into high road life sciences careers **Partnerships:** **Increase number** of partnerships between life sciences firms and the workforce ecosystem
INITIATIVE LEVEL INVESTMENTS	**1A** **$15M** repayable investment to catalyze development of two new multi-tenant graduation spaces **1B** **$10M** initial repayable investment to launch the Tenant Improvement Fund **2** **$300,000** investment and significant staff time from DRP/DEO to lead zoning and permitting reform and navigation efforts	**3A** **$20M** initial repayable investment in low-interest loans to support local biomanufacturing companies **3B** **Non-cash investment** of County-owned land and tax increment financing via EIFDs to attract larger life sciences companies to LA County	**4A / 4B** **Hire Life Sciences Liaison team** to lead implementation of the strategy and support working groups **4C** **Hire Business Retention and Expansion Lead** to build broader Coalition to help attract, retain, and grow life sciences firms in LA County	**5A** **$2M** investment in launching new life sciences HRTPs and centralizing existing workforce resources **5B** **$400,000** investment in programs to better connect underrepresented talent with life sciences opportunities in LA County
TOTAL INITIAL INVESTMENT	**$43.5M Capital Investment and 4-6 FTE Staff from DEO/DRP**			

IMPACT OF THIS STRATEGY:

DEO's capital and human resource investment will be highly catalytic, with the intent of directly supporting up to 100 firms and creating up to 10,000 quality jobs. The strategy prioritizes equity alongside growth — these jobs and investments are designed to generate lasting benefits for underrepresented communities that have historically lacked pathways into life sciences.

The indirect impact of the strategy will be far greater, as: evergreen investments support many future firms, founders, and workers; companies stay, grow, hire, and re-invest in LA County; revenues, capital, and carried interest are reinvested in other LA County-based life sciences activity; and as a stronger cluster attracts more talent, funding, and recognition.

PRIORITIZATION:

Supporting life sciences growth will require consistent and ongoing prioritization from the County, even as it juggles other critical initiatives. Peer regions (e.g., Boston, the Bay Area, San Diego, New York) have found success by investing significant resources and making sustained, long-term commitments to drive sectoral growth, which has in turn led to accelerated development in their regions. A similar commitment is needed for LA County to achieve its full potential as a leading life sciences cluster, build the foundation for future industry growth, create thousands of quality, inclusive jobs for Angelenos, and share with the world the lifechanging innovations coming out of the ecosystem that will lead to health improvements for millions. In addition, as LA County grapples with ongoing impacts from the COVID-19 pandemic, challenges facing the entertainment industry, uncertain federal funding priorities, and long-term recovery from the January 2025 wildfires, it is important in this moment to bolster an industry that provides significant economic, social, environmental, and health benefits throughout the region.

Photo source: LA Department of Economic Opportunity

Figure 3: High Level Implementation Timeline

IMPLEMENTATION TIMELINE FOR DEO-LED INITIATIVES: **It is recommended that Initiatives 1, 2, and 4 be prioritized in Y1, with initiatives 3 and 5 launched in Y2**

STRATEGIC INITIATIVE

TIMEFRAME	0-6 MONTHS	6-12 MONTHS	YEAR 2	YEAR 3+
1. Expand Graduation Space	Design and launch tenant improvement fund	Launch public RFP to build and operate multi-tenant graduation space Make selections and disburse initial tenant improvement funding	Select master lease holders and begin construction of multi-tenant graduation space	Open multi-tenant graduation space to local life sciences companies Secure additional capital to replenish tenant improvement fund
2. Champion Zoning & Permitting Reform	**Zoning:** Conduct regulatory review and present ordinance detailing proposed zoning changes **Permitting:** Conduct post-mortem review of permitting challenges	**Zoning:** Conduct CEQA review and public hearings **Permitting:** Launch targeted programs to expedite permitting based on post-mortem findings	By end of Year 3, complete CEQA and public reviews, and entry into force of zoning and permitting reforms	
3. Provide Targeted Packages of Incentives		Hire BRE Lead and establish BRE coalition Design and launch biomanufacturing revolving loan fund	Establish new incentives by creating EIFDs and designating County-owned land for the life sciences Make selections and disburse initial biomanufacturing loans	Launch new incentives to retain/ attract 10+ life sciences firms a year Secure additional capital to replenish biomanufacturing loan fund
4. Build a Pathway to Long-Term Relational Infrastructure	Hire Life Science Liaison team, engage industry co-lead, and formalize advisory board to guide strategy implementation Launch working groups for initiatives 1 and 2.	Launch working groups for DEO-led initiatives 3 and 5 Work with industry to launch working groups for industry-led initiatives 6, 7, and 8		Conduct mid-point strategy review and publish interim progress report
5. Better Connect Workforce Offerings		Launch industry-facing landing page and asset map	Conduct community inclusivity needs assessment Launch HRTPs	Launch community ambassador program, worker-facing landing page and other resources (based on input from needs assessment)

Context and Approach

PROJECT CONTEXT

The life sciences industry is undergoing a period of profound expansion, driven by rapid technological advancements, an evolving regulatory landscape, and increasing global demand for medical innovation. This expansion is fueling quality, inclusive job growth, groundbreaking medical discoveries, and transformative products, from bio-based manufacturing to AI-driven healthcare solutions. Over the past decade, the U.S. life sciences industry has added more than 350,000 jobs, with average salaries exceeding $100,000.[6]

Looking ahead, the industry is poised for continued robust job growth over the next 5-10 years, with key trends reshaping the industry. AI and digital transformation are driving efficiencies in research, diagnostics, and drug development. Breakthroughs in vaccines, precision medicine, and delivery platforms are expanding treatment possibilities. Advancements in biomanufacturing are revolutionizing production processes and supply chains, and onshoring efforts are bringing more biomanufacturing investment and jobs to the U.S. And a rising focus on health equity is leading to greater inclusion of underrepresented populations in clinical trials and workforce development. Capitalizing on opportunities in the life sciences remains a priority – and, in fact, becomes even more critical – in the context of ongoing wildfire recovery and a shifting macroeconomic environment, as the need has never been greater for pathways to inclusive growth and a sustainable future for all residents of LA County.[7]

LA COUNTY'S LIFE SCIENCES SECTOR GROWTH TO DATE

Recognizing the sector's potential, LA County has prioritized life sciences development over the past decade. Between 2012 and 2023, life sciences employment in the County grew by 9%, adding 3,250 jobs during a period when overall private sector employment declined by 2%. This growth has been bolstered by a diverse and accessible talent pipeline: 64% of the County's life sciences workforce does not hold a bachelor's degree, and 37% identify as Hispanic or Black — figures that position LA ahead of many peer regions in workforce inclusivity. The jobs are also high paying, with average salaries reaching $116K per year, 70% higher than the County's overall average.[8]

Industry growth and workforce inclusivity to date has been supported by a number of critical County investments in recent years. Previous studies, including reports from Battelle (2014) and LAEDC (2017), identified multiple opportunities to strengthen LA's life sciences cluster. In response, the County has taken important steps, particularly in workforce development and with early stage business support.

6. [a] Dalberg analysis based on BLS data. [b] BLS.gov, 2023.
7. Note: The County has dedicated funds set aside to support strategic priorities for the life sciences cluster, protected from budgetary shifts.
8. Dalberg analysis of BLS data.

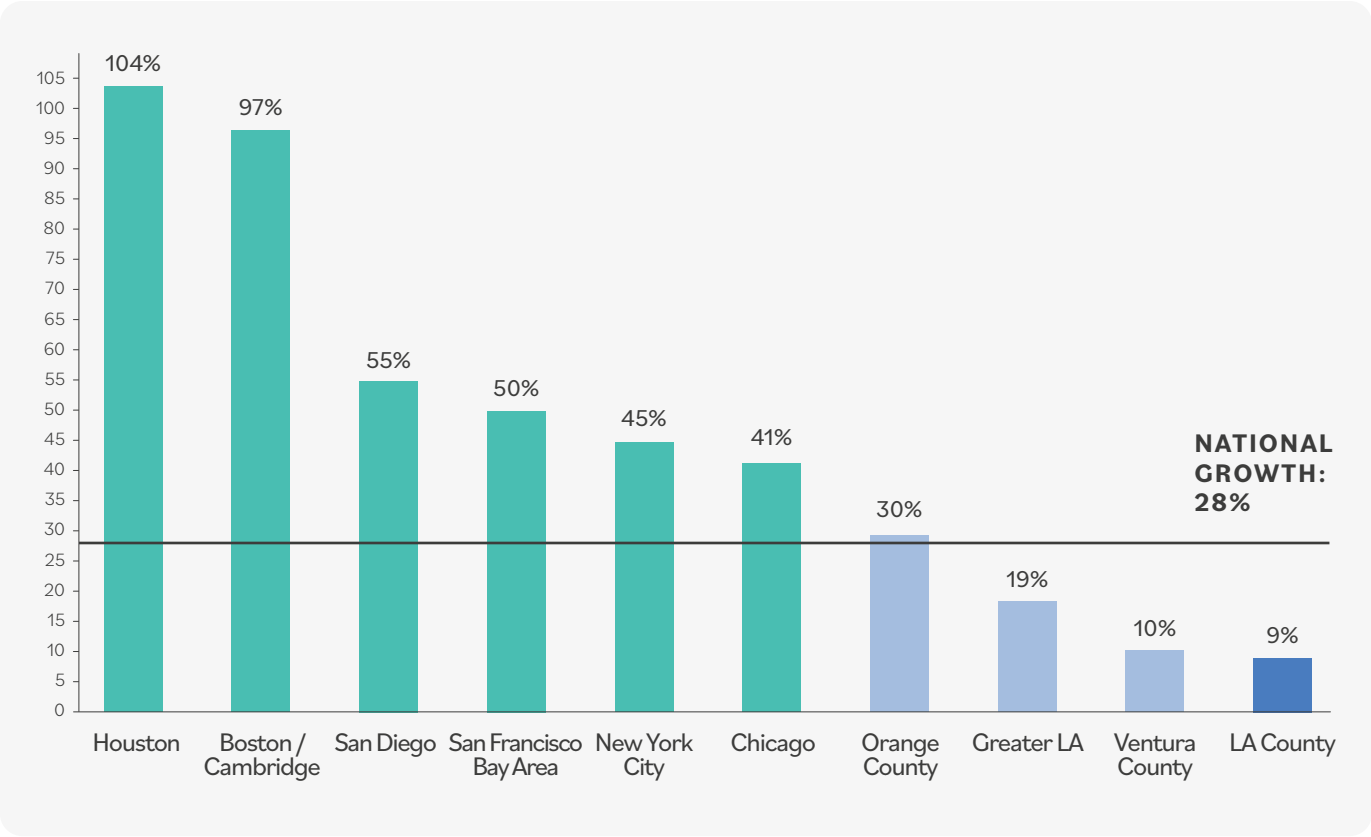
Table 1: LA County's Investments in its Life Sciences Cluster to Date

INVESTMENT	STATUS
$1.2M	Funded inclusive employment pathway programs including 100+ internships through the Bio Futures program (in partnership with BioscienceLA) and ~120 completed apprenticeships through the Bio-Flex program (in partnership with the South Bay Workforce Investment Board).
$6M	Funded the creation of new incubators like California State University, Los Angeles's LA BioSpace and The Lundquist Institute's BioLabs, helping to grow the life sciences incubator ecosystem from 1 to 9 in LA County. These programs have been highly effective. CSULA's Biospace alone has incubated 24 companies that have raised a total of $260M in capital, and led to the creation of 113 jobs.
$15M	Invested in early-stage firms through Bioscience Investment Fund created with MarsBio (2020-2022). The County contributed $1 million to the fund matched by $2 million fundraised by MarsBio, which was deployed into a portfolio of bioscience startups in the LA Region.
$4M+	Provided land and funding to help launch BioscienceLA with a mission to connect and support the development of the County's life sciences cluster.
15 acres in land	Donated land for the biotech park run by the Lundquist Institute on the Harbor-UCLA Medical Center Campus, which is presently in development. This development has led to significant job creation, with more than 1200 local jobs being created.

While these investments have made a measurable impact — particularly in increasing the number of incubators and producing a more diverse life sciences workforce[9] — LA County has still fallen behind national averages and peer-regions when it comes to job creation (See Figure 4). The County's life sciences location quotient (LQ),[10] a measure of industry competitiveness, declined from 1.04 in 2012 (indicating a 4% industry job surplus compared to the national average) to 0.8 in 2023 (indicating a 20% deficit). Among seven comparable life sciences hubs, LA County was the only region to experience a drop in LQ over the past decade and experienced the lowest job growth of any peer region.

9. [a] Dalberg analysis of BLS data. [b] Stakeholder interviews, 2024. [c] Dalberg analysis of award/degree data collected from the IPEDS by NCES.
10. A location quotient measures a region's industrial specialization relative to the U.S., i.e., the share of employees in life sciences vs all industries in LA County relative to the U.S. A region is considered competitive if the location quotient is larger than 1

Figure 4: Percent Change in Employment Across Peer Regions from 2012 to 2023[11,12]



THE NEED FOR STRATEGIC ACTION

Reversing this trend would add thousands of new, quality, inclusive jobs for LA County residents over the next decade. If LA County continues at its current growth rate (9%), it will add fewer than 3,500 life sciences jobs by 2035. However, by matching the national average growth rate (28%), it could add over 10,000 new jobs. If LA County reaches the 65% job growth rate of peer regions that have heavily invested in life sciences, the County could add nearly 25,000 jobs.[13]

Recognizing this opportunity, LA County has prioritized life sciences as a critical driver of economic and workforce growth. Board directives have underscored this commitment, including a July 2022 motion from Supervisor Mitchell to expand the life sciences industry and create equitable high road career pathways. In 2023, DRP launched a Life Sciences Permitting Liaison to assist firms in navigating permitting processes. The establishment of the DEO in 2022 has given the County leverage to advance inclusive, high-growth cluster strategies, such as those in life sciences.

11. For the purposes of this study, Greater LA is defined as LA, Orange, and Ventura Counties. To ensure comparability with peer regions such as Boston/Cambridge, San Francisco Bay Area, this study has taken a regional approach for peer comparisons.
12. Dalberg analysis of BLS data.
13. Dalberg analysis of BLS data.

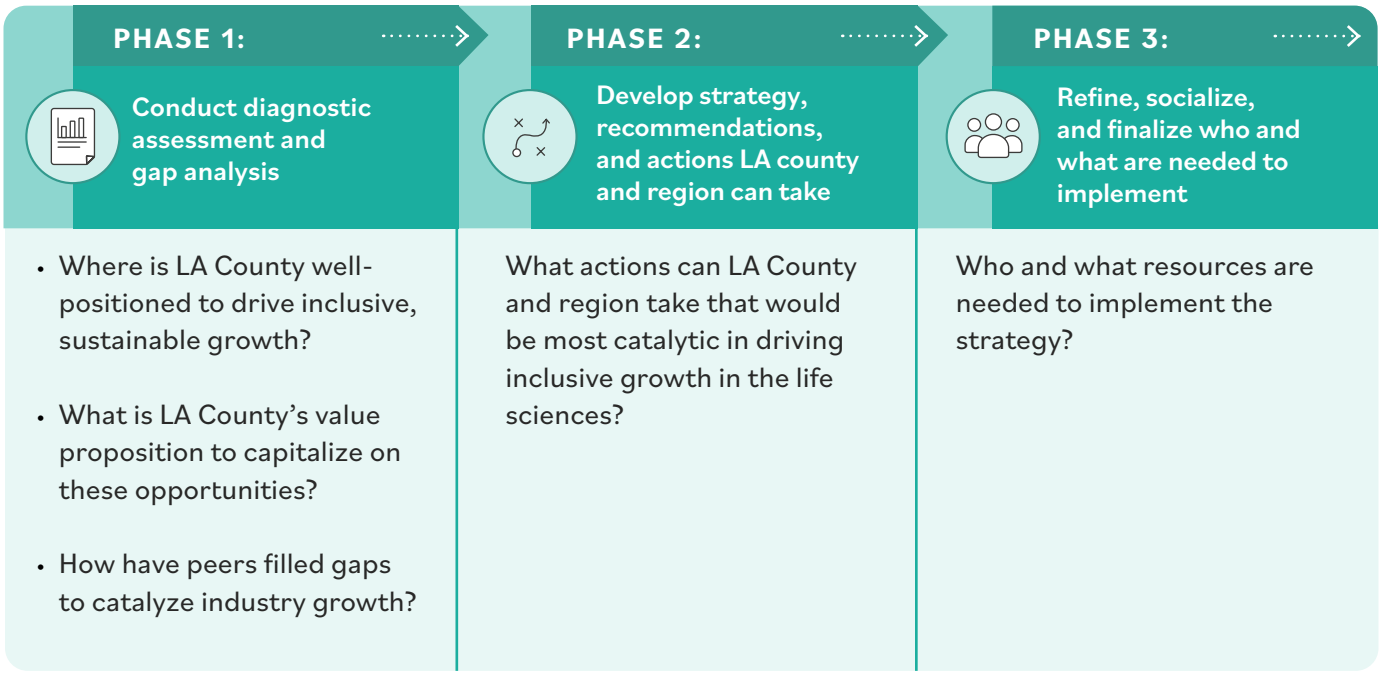
DEFINING THE LIFE SCIENCES INDUSTRY:

The life sciences industry encompasses a broad range of sectors dedicated to advancing health through research, innovation, and the development of products and services. For this report, the life sciences industry includes sectors that are export-oriented (i.e., not solely population-serving), competitive in LA County, and offer significant job creation potential. These sectors include pharmaceuticals, medical devices, research and testing laboratories, agricultural biotechnology, and digital health. Hospitals, distribution centers, and higher education institutions are excluded because they are not export oriented and tend to grow or contract in-line with population trends.[14]

PROJECT OBJECTIVES AND METHODOLOGY

DEO commissioned Dalberg Advisors to develop a strategy to advance inclusive growth in the County's life sciences industry cluster. The strategy aims to outline specific actions that LA County can take in collaboration with industry partners to unlock binding constraints to growth and realize LA County's potential as a global life sciences hub. While past studies have proposed a comprehensive set of recommendations to grow the cluster, this strategy prioritizes the most foundational, immediate, and impactful actions. It focuses on steps that LA County can lead or co-lead that are necessary to unlock the next stage of life sciences industrial growth for the County. This strategy also brings a strong equity lens and focuses on actions that not only advance topline growth (e.g., industrial output, employment), but that also expand inclusive opportunity for individuals and communities that have traditionally lacked pathways into life sciences-related entrepreneurship, capital-formation, and careers.

Figure 5: Project Phasing and Objectives



14. This definition is based on NAICS codes, which are detailed in Annex A.

This study was conducted in three phases to enable rigorous analysis, comprehensive stakeholder engagement, and collaborative iteration:

1. PHASE 1:

Diagnostic Assessment and Gap Analysis:

This phase assessed LA County's life sciences sector to identify comparative advantages, binding constraints, and high-potential areas for inclusive and sustainable growth in industry output, employment, wages, and tax revenue (see Section III for detailed findings).

The analysis benchmarked LA County and Greater LA against six life sciences clusters: Boston/Cambridge (mature), Chicago (emergent), Houston (emergent), New York City (emergent), San Diego (mature), and San Francisco Bay Area (mature).[15]

2. PHASE 2:

Develop strategy, recommendations, and action plan to execute those recommendations:

Building on Phase 1 findings, workshops with public, private, and academic stakeholders shaped a targeted action plan comprising eight high-impact initiatives to drive industry growth.

3. PHASE 3:

Refine, socialize, and finalize the action plan:

The draft strategy was refined through consultations with an Advisory Board, key implementation partners, and each Board of Supervisors Office to ensure alignment with County and community priorities.

The study followed an inclusive approach, engaging experts across industry, academia, workforce development, real estate, entrepreneurship, and finance, as well as community-based organizations and the five Board offices. Multiple forms of engagement were employed, including focus groups to surface cross-sector insights and priorities, individual interviews to go deeper on specific topics, and the creation of a diverse Advisory Board specially formed to guide strategy development.[16]

15. Given Orange County's large share of life sciences employment, particularly medical devices, analyzing Greater LA (comprised of Los Angeles, Orange, and Ventura Counties) in addition to LA County paints a fuller picture of the regional cluster's state and growth. To ensure comparability with peer regions such as Boston/Cambridge and the San Francisco Bay Area, this study has also taken a regional approach for peer comparisons.
16. Focus groups centered on the topics of entrepreneurship, research/academia, workforce, physical space, and one each for potential growth area (biomanufacturing, AI convergence, medical devices, and clinical research). See Annex B for the list of Advisory Board members. See Annex C for more detail on analytical inputs.

Figure 6: Overview of Analytical Inputs

17+

ADVISORY BOARD MEMBERS

Board engaged in 3 advisory meetings

60+

INTERVIEWS

Individual stakeholders consulted

9

FOCUS GROUP

Groups with 70+ attendees consulted

20

DATA ANALYSIS

Databases consulted and analyzed

150+

DESK RESEARCH

Reports and sources reviewed

Photo source: LA Department of Economic Opportunity

Where Los Angeles County's Life Sciences Cluster Stands Today

SUMMARY OF LA COUNTY'S VALUE PROPOSITION

LA County has several unique comparative advantages that are critical to growing a successful life sciences industry cluster. Life sciences entrepreneurs, firms, investors, and talent choose LA County because of its world-class research institutions and racially and technically diverse workforce. The County is an innovation leader among its peer set, producing cutting-edge research and graduating the largest and one of the most diverse life sciences workforces in the country. LA County also has many assets that make it attractive for the trend-aligned industry areas of biotechnology & pharmaceuticals (biopharma), biomanufacturing, convergence with technology & AI, and medical devices.

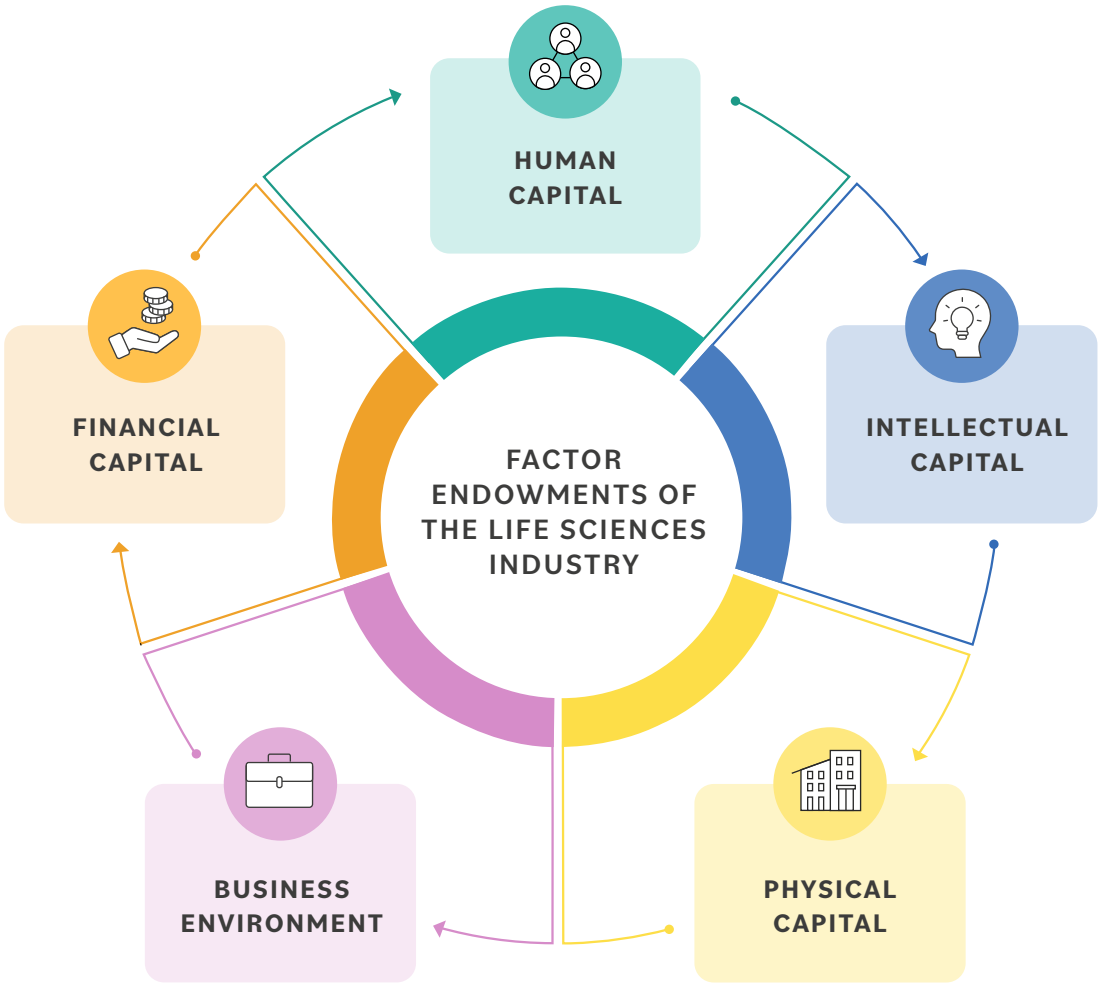
However, LA County faces 'binding constraints' that hinder the ability of life sciences firms to stay, invest, grow, and hire in LA County — especially related to physical infrastructure and the business environment. The lack of sufficient and affordable physical space for life sciences firms, especially at the graduation stage, as well as a complex and costly business and regulatory environment, limit the industry cluster's growth potential. Life sciences firms also face challenges with stunted financial capital flows in the region, particularly in early- and late-stage funding.

LA County's value proposition against key industry factor endowments is assessed further in the section that follows. Additional barriers may fall beyond the scope of this strategy, such as affordability barriers that go beyond life sciences and impact all industries in the region, with challenges such as housing shortages, cost of living, long commutes for workers, and the lack of strong business clusters creating further difficulties in attracting talent and firms. Yet, these constraints are not unique to Los Angeles, and elements of these exist in Boston as well as the Bay Area.

LA COUNTY'S COMPETITIVE POSITION ACROSS KEY INDUSTRY FACTOR ENDOWMENTS

LA County's competitive position can be evaluated across five key industry factor endowments: human capital, intellectual capital, physical capital, business environment, and financial capital. These factor endowments collectively determine the region's value proposition and ability to cultivate, retain, and expand its life sciences sector. While LA County excels in human and intellectual capital, it faces significant challenges in physical capital, the business environment, and financial capital, which constrain firm growth and job creation. Figure 7 below depicts a summary of LA County's competitive positioning across each of these endowments.

Figure 7: Factor Endowment Framework Evaluation for LA County



HUMAN CAPITAL	Skills, expertise, and availability of labor force related to life sciences
INTELLECTUAL CAPITAL	Life sciences knowledge, innovations, and intellectual assets
PHYSICAL CAPITAL	Factors relating to the physical environment, including infrastructure, facilities, transportation and logistics
BUSINESS ENVIRONMENT	Firm concentration, collaboration, and the regulatory and cost factors that impact business viability
FINANCIAL CAPITAL	Access to financial resources to support companies from research to commercialization

- Strengths of LAC's life sciences sector that should be leveraged in any growth strategy for the cluster, especially LAC's diverse workforce and early-stage intellectual capital
- Key challenges for LAC's life sciences sector that should be addressed in any growth strategy for the sector, especially binding constraints related to Physical capital and Business environment

HUMAN CAPITAL:

Human capital refers to the skills, expertise, and availability of a workforce, which are essential for powering innovation and productivity in the life sciences industry.

LA County's human capital in life sciences is a foundational strength. It boasts one of the most diverse and technically skilled workforces in the nation, setting it apart as life sciences firms continue to diversify their workforces.[17] LA County's workforce is notable for its accessibility — nearly 60% of workers enter the life sciences industry without a bachelor's or advanced degree, making it the most accessible in the country. Additionally, 37% of the workforce identifies as Hispanic or Black, the second highest among peer regions, positioning LA County as a leader in workforce diversity at a time when life sciences firms are increasingly focused on expanding equity and inclusion.[18]

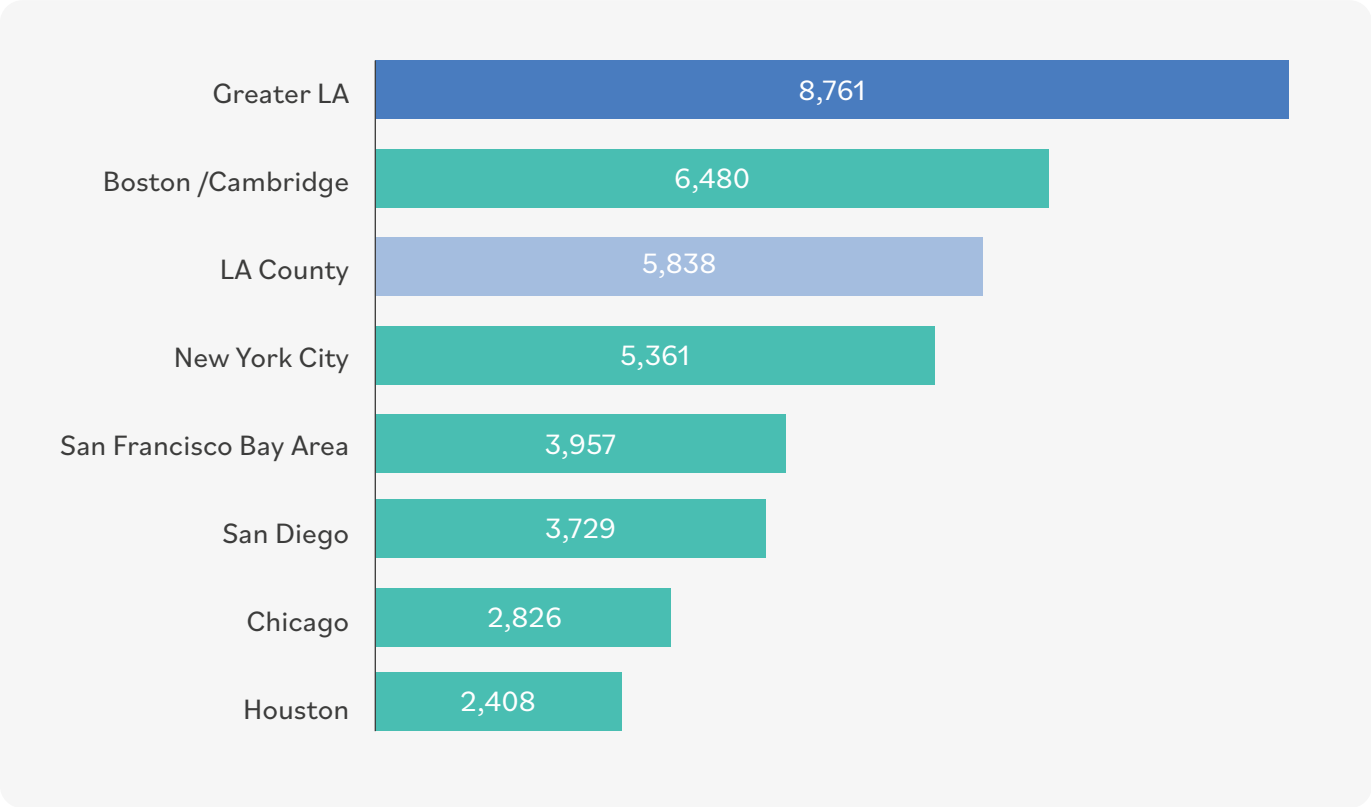
> **"The main advantage of LA is the good quality and diversity of its workforce, which translates in the culture of [our] site."**
>
> — BIOMANUFACTURING FIRM

Greater Los Angeles outpaces peer regions in producing life sciences graduates, serving as a key supplier of skilled talent to clusters nationwide. In 2023, the region generated 35% more life sciences graduates than any other peer region. However, Greater LA produces four times more graduates than new life sciences jobs created in the region — far exceeding the disparity seen in other clusters — as local industry growth has lagged behind educational output. As a result, LA County acts as a net exporter of life sciences talent.[19]

LA County supports the most extensive network of education programs for life sciences talent among peer regions, with 28 certificate and 49 associate degree programs ensuring that individuals without four-year degrees can access well-paying jobs in the sector.[20] County-funded workforce initiatives, such as the BioFutures Internship program and the South Bay Workforce Investment Board's Bio-Flex program, have expanded career pathways, connecting graduates to industry opportunities.[21] Strengthening this pipeline further, LA Mission College recently launched a first-of-its-kind bachelor's degree in biomanufacturing, designed in collaboration with leading local life sciences firms.[22]

17. Technically diverse workforce refers to the dispersion of the labor force's educational attainment.
18. [a] Dalberg analysis of BLS data.
19. Note: Greater LA's rate of annual new graduates compared to annual jobs created is similar to emerging life sciences clusters like New York and Houston, while more established clusters like San Francisco and San Diego only produce 2x as many graduates as jobs annually. Boston/Cambridge is a net talent importer, producing more jobs than graduates.
20. [a] Dalberg analysis of award/degree data collected from the IPEDS by NCES. [b] Dalberg analysis of BLS data.
21. [a] "BioFutures," Bioscience LA, n.d. [b] "BioFlex," South Bay Workforce Investment Board, n.d.
22. LA Mission College Biotech Program, 2020-2024.

Figure 8: Life Sciences Awards/Degrees by Region, Cumulative of All Degree Levels, 2023[23]



However, LA County has yet to fully capitalize on its homegrown talent. Despite significant investments in workforce training programs, the region lacks a centralized mechanism to efficiently connect firms with skilled workers and vice versa — particularly for middle-skill roles that require more than a high school diploma but less than a four-year degree.[24] Additionally, disparities in employment pathways persist as certain communities remain underrepresented in life sciences and face barriers to accessing opportunities, while some existing workforce programs have unfilled slots.[25]

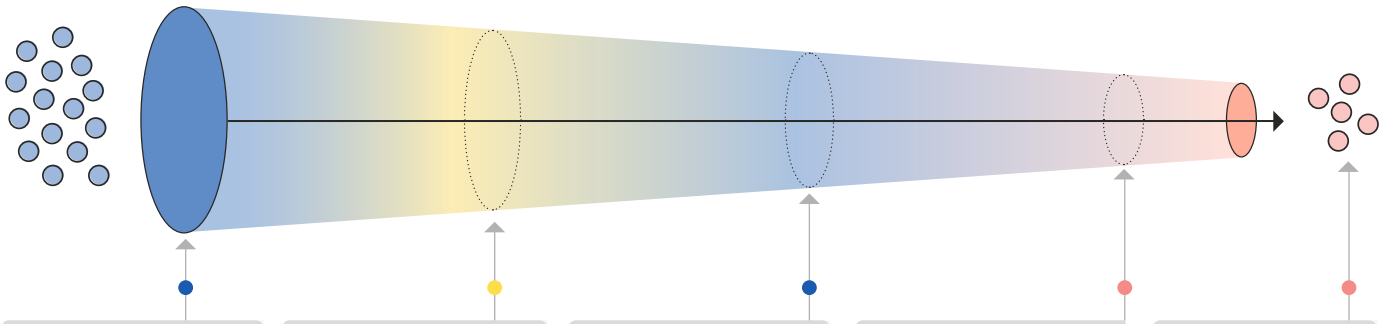
23. Dalberg analysis of award/degree data collected from the IPEDS by NCES.
24. [a] Dalberg analysis of award/degree data collected from the IPEDS by NCES. [b] Stakeholder interviews, 2024.
25. Stakeholder interviews, 2024.

INTELLECTUAL CAPITAL:

Intellectual capital encompasses the scientific knowledge, research, and innovations that provide the foundation for advancement in the life sciences industry.

LA County is home to world-leading, cutting edge, research institutions, which provide a significant comparative advantage in developing intellectual capital. The County's research institutions have secured substantial federal funding and produce high volumes of publications and patents. When adjusted for the size of its R&D workforce, Greater LA leads its peers in life science-related patent output, producing nearly 16,000 in the last decade.[26] These research activities fuel the potential for commercial breakthroughs and the development of new companies.

Figure 9: LA County's Performance at Various Stages of The Innovation Funnel From Research to Commercialization in Life Sciences[27]



R&D EXPENDITURES:	PUBLICATIONS:	PATENTS:	LICENSING:	STARTUP FORMATION:
LA universities' research expenditures are ranked **3rd out of 7 regions** and are on par with Boston/ Cambridge and New York City.	LA universities rank **4th out of 7 regions** in the number of life science-related publications they produce. Caltech is particularly strong in its research productivity.	Greater LA is ranked **2nd out of 7 regions** in absolute patent production. Once adjusted for the number of R&D employees per region, it ranks first.	LA universities' gross licensing income lags far behind all other peers. The number of licenses and options executed in LA is ranked **6th out of 7 regions** and has grown slower than peers since 2013.	LA universities' new startup formation is ranked **5th out of 7 regions** and has decreased since 2013.

26. [a] Dalberg Analysis of NSF and USPTO PatentsView data, 2013-2023. [b] Metrics for the San Francisco Bay Area includes patent data from all nine counties in the Bay Area. [c] 2022 employment data from six R&D NAICS codes from Dalberg analysis of BLS data.
27. All data from the Association of University Technology Managers (AUTM) looks across all fields, so this data does not speak directly to technology transfer in the life sciences.

However, the County struggles to translate its robust research output into commercial success. Over the past decade, startup formation in LA County has slowed, falling behind most peer regions. In 2013, LA County produced more startups than any other peer, but by 2022, the region had fallen to 5th out of 7 peer regions.[28] Lengthy and complex technology transfer processes at local research institutions create barriers for researchers and entrepreneurs looking to commercialize their innovations. Many face delays of up to a year in securing licensing agreements and navigating regulatory requirements, all deterring factors in new company formation.[29] These bottlenecks limit the number of start-ups, which further limits a strong pipeline of growth-stage life sciences firms in the County. Given the high failure rates in this industry, a large volume of early-stage companies is necessary to facilitate cluster growth. Successful peer regions have focused on improving the transference of university-developed life sciences technologies as a lever to generate growth.[30]

> **Only 1% of IP is commercialized across sectors… I've always felt that if I don't start a company, no one will see the technology again."**
>
> — UNIVERSITY TECHNOLOGY TRANSFER OFFICE

28. [a] Dalberg Analysis of AUTM STATT database, 2013-2022. [b] "Office of Technology Management Impact Report FY22," University of Illinois Chicago, 2022. [c] "Ideas, inventions, impact, Technology Commercialization Report," University of California, 2013. [d] Dalberg analysis of National Science Foundation, Rankings by total R&D expenditures, 2013-2022.
29. Research community focus group, 2024.
30. [a] "CBS Funding Programs," Chicago Biomedical Consortium, n.d. [b] "Evolution of the New York City Life Sciences Market," Build Bio, 2024.

PHYSICAL CAPITAL:

Physical capital refers to the infrastructure, facilities, and real estate that provide life sciences firms with the space to conduct and scale their operations.

Insufficient and unaffordable physical space for life sciences firms in LA County is a binding constraint. Demand greatly outstrips supply of life sciences physical capital in the region, which has some of the lowest life sciences real estate vacancy rates and total square footage of inventory, compared to national peers. This shortage may not improve on its own in the near-term, as planned construction in Greater LA is also near-zero, forcing life sciences talent, entrepreneurs, and firms to seek space elsewhere.

Figure 10: Comparison of Life Sciences Physical Capital in LA Compared with Peer Regions[31]

	DIRECT AND SUBLEASE VACANCY RATES BY MARKET, 2024	TOTAL CURRENT INVENTORY (SQFT)	NEW CONSTRUCTION AS % OF CURRENT INVENTORY
Greater LA	3.0%	**8 M**	0%
San Diego	16.0%	**23 M**	17%
Chicago	21.0%	**7.8 M**	0%
San Francisco Bay Area	24.0%	**48 M**	7.3%
Boston	27.0%	**44 M**	13%
New York City	41.0%	**4 M**	0%

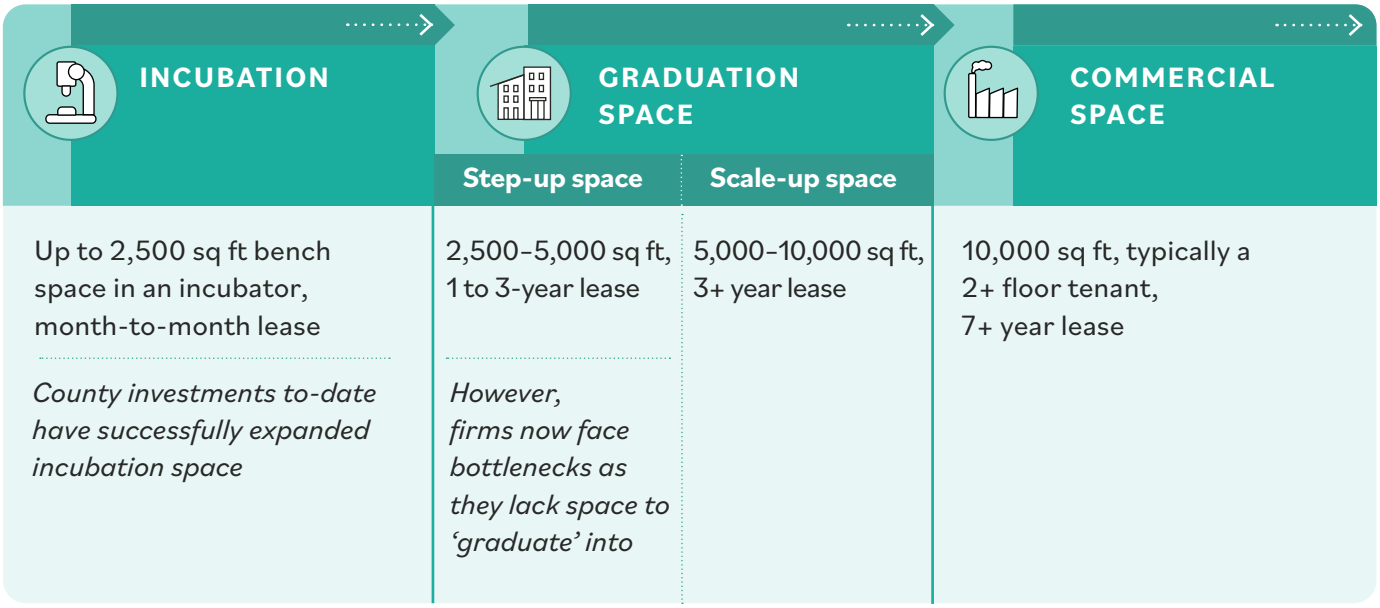
Over the last decade, LA County expanded incubation space for life sciences firms, but bottlenecks have emerged at the 'graduation stage' as growing firms lack affordable step-up space. 'Graduation stage' firms have completed the incubation stage, which focused on research and early validation, and are positioned to scale their efforts —if they can find space to do so. LA County incubators report that a significant proportion of firms (as much as 50% from some incubators) graduating from their programs relocate to other regions, primarily due to the lack of affordable and move-in ready lab space.[32] Such firms are increasingly looking to regions with more favorable conditions, such as San Diego and the Bay Area, which offer an oversupply of existing lab space (developed when construction was cheaper) at lower costs.

31. "Life Sciences Fit Out Costs Guide," Cushman & Wakefield, 2024.
32. Figure cited by incubators across LA County, 2024.

Meanwhile, developers are hesitant to construct new life sciences facilities in LA County due to high construction costs, stringent permitting requirements, and failure risk associated with early-stage firms.[33] Without targeted interventions to expand life sciences real estate, particularly for early- and mid-stage firms, LA County risks losing promising firms just as they are poised for growth and job creation.

> **There's a lab shortage in LA; it may be the tightest lab market in the U.S. There's just not a lot of excess supply."**
>
> —LIFE SCIENCES CONSULTANT

Figure 11: Life Sciences Firms Physical Space Needs through Growth Stages



> **LA is a very broad area with a lot of micro-clusters. When it comes to where to put the money, the County tries to spread it evenly across the geography, and no one spot is becoming where you plant the flag and develop."**
>
> —LIFE SCIENCES INCUBATOR

Shortages in physical space for life sciences are exacerbated by other challenges faced by life sciences firms in LA County. For example, life sciences firms are not geographically concentrated in the County, rather dispersed in several 'mini ecosystems' around the region. This limits the potential for catalytic impact of life sciences development in spatially concentrated 'mega-hubs', like in San Francisco's Mission Bay or Cambridge's Kendall Square. Furthermore, LA County's zoning and permitting regulations have not caught up to the needs of life sciences firms, providing unnecessary barriers to expansion and further exacerbating space constraints (see next section on business environment for detail).

33. Physical space focus group, 2024.

BUSINESS ENVIRONMENT:

Business environment includes regulatory landscape, industry networks, and cost factors that facilitate or prevent firms from starting and growing.

LA County's complex and expensive business environment poses a binding constraint for life sciences firms. These constraints challenge the County's ability to attract and retain firms, especially in comparison to peer regions that offer more business-friendly environments.

For example, high operating costs reduce LA County's competitiveness. The region ranks among the most costly places to operate in the country,[34] with few proactive incentives available to attract life sciences firms. While peer regions such as Massachusetts and North Carolina offer robust tax credits and financial incentives to attract and retain firms, LA County's offerings remain limited and often underutilized due to restrictive eligibility criteria and a lack of awareness. LA County provides few financial incentives, making it difficult to compete with peer regions that offer significant benefits to proactively attract life sciences businesses, like Massachusetts, which has offered generous, sweeping tax incentives to companies that add local jobs (see additional detail under Initiative 3.[35]

Figure 12: Doing Business North America Index 2022[36]

Performance : Poor Medium Good

	INDEX RANKING	STARTING A BUSINESS	EMPLOYING WORKERS	GETTING ELECTRICITY	LAND & SPACE USE	PAYING TAXES
Houston	25	79	15	44	16	6
Chicago	42	43	56	35	5	78
Boston	66	66	70	53	11	50
New York City	74	58	68	32	82	79
San Diego	76	55	80	57	57	64
San Francisco	78	52	81	57	67	62
Los Angeles	82	56	83	57	79	77

34. "Kosmont-Rose Institute 2024 Cost of Doing Business Survey," Kosmont Companies, 2024. Note: "Los Angeles" here includes all cities in LA, Orange, San Bernardino, and Riverside Counties. The comparators included all cities in LA, Orange, San Bernardino, and Riverside Counties; San Francisco and San José; and the top 40 destination cities in the western U.S. for businesses leaving California in Arizona, Nevada, and Texas. The seven variables included in the cost of doing business were business license fee, utility tax, sales tax, minimum wage, average commercial rent, crime rates, and housing affordability.
35. [a] "Tax Incentive," MLSC, 2024. [b] "16th Round of Tax Incentive Launches Today," MLSC, 2024. [c] "Healey-Driscoll Administration Announces More than $21 Million in Tax Incentives for 19 Massachusetts Life Sciences Companies,"Mass.gov, 2024.
36. Doing Business North America Index, Arizona State University, 2022. Note: The larger the number, the lower the position in the ranking; Rankings are determined by tertiles (thirds) – 'good' rankings fall in the top third (1-28), 'medium' fall in the middle tertile (29-56), and 'poor' fall in the bottom tertile (57-83).

In addition, zoning and permitting regulations have not kept pace with the needs of the life sciences sector.[37] Life sciences firms must navigate 89 different zoning codes — across 88 cities and unincorporated LA County — as well as multiple layers of permitting requirements, creating uncertainty and delays. In 2023, DRP established a Life Sciences Permitting Liaison to help accelerate opportunities for life sciences expansion and development in unincorporated areas of the County. However, many firms still cite opaque and prolonged approval processes as a deterrent to investing in LA County, leading them to seek locations where regulatory pathways are clearer and faster.

> **We have a ton of bureaucracy; the licensing and permitting to open a company is very lengthy. Companies wait nine months for a permit while still having operating costs like paying loans."**
>
> — GOVERNMENT OFFICIAL

> **Companies don't always know where or who to go to. Even if there are great things happening, they aren't useful if people don't know where to look. We need to clarify where people can get support."**
>
> — INDUSTRY ASSOCIATION

Fragmentation and limited collaboration across the industry further exacerbate these challenges. Unlike leading life sciences hubs that benefit from strong anchor firms and cohesive industry leadership, LA County's life sciences sector is composed of many smaller firms and geographically dispersed micro-clusters that operate in silos. The absence of coordinated business retention and expansion efforts makes it more difficult to attract investment and keep firms in the region. Similarly, LA County could further strengthen its relational infrastructure to better align the many ecosystem actions geographically dispersed throughout the County.

37. Physical space focus group, 2024. Note: An attempt to implement a Biosciences Overlay Zone to facilitate life sciences development did not eventuate.

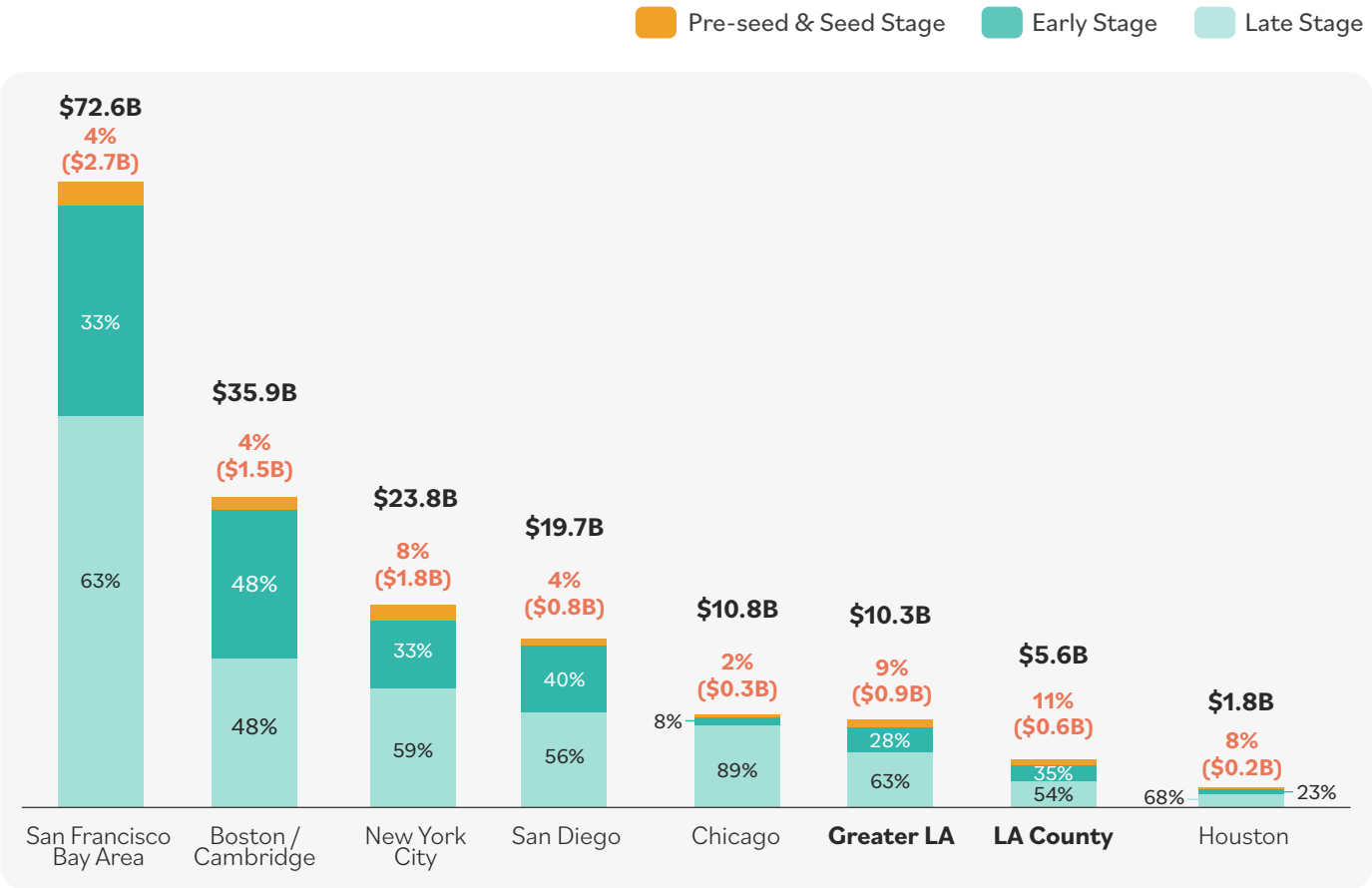
FINANCIAL CAPITAL:

Financial capital refers to the funding and investment needed to help life sciences firms launch, bring innovations to market, and expand.

Life sciences firms also face constraints in securing financial capital within LA County. The region's life sciences ecosystem is underfunded in public and private capital as compared to its peers, particularly in later-stage venture capital and growth financing.

Firms face a "funding valley of death" due to a lower concentration of life sciences-focused venture capital firms. As a result, many promising startups relocate to regions where they can secure larger investments and greater access to capital.

Figure 13: Total VC Investment in The Life Sciences by Funding Stage (2019-2023)[38]



These challenges extend to capturing public funding opportunities, and the transition from research funding to private investment remains a challenge. While the region's research institutions receive substantial federal grant funding, only a small percentage of these funds are awarded directly to for-profit life sciences firms. This gap limits the ability of local startups to scale and commercialize innovations within the County. For example, LA County secured over $15B in National Institute of Health (NIH) funding between 2014-2023, but only 3.5% of these funds went to for-profit companies on average, a lower percentage than four of six peer regions.[39]

38. Dalberg analysis of Pitchbook Data, 2024.
39. Dalberg Analysis of data from National Institute of Health Award Data, and data from Pitchbook Data, Inc. 2024.

FACTOR ENDOWMENT IMPLICATIONS FOR THE COUNTY'S LIFE SCIENCES STRATEGY

LA County possesses several foundational strengths that have the potential to support a thriving, world-class life sciences cluster that attracts founders, firms, investors, and talent from around the world and creates thousands of quality, inclusive jobs. However, without targeted interventions to address its binding constraints to growth — most acutely in physical capital and business environment but also financial capital — the region will continue to fall short of realizing this potential. Expanding access to real estate, streamlining regulatory processes, enhancing business incentives, and increasing investment in later-stage funding are critical. By focusing on alleviating these baseline challenges, LA County can unlock a pathway to sustained industry growth. In parallel, the County must better leverage its strengths to support company success and drive inclusive job creation. This includes unlocking the commercialization potential of innovative intellectual property from local research institutions and better connecting strong existing workforce programs and resources to meet the needs of diverse communities and firms looking to invest, scale, and hire in LA County. As companies mature and begin hiring, LA County's leadership in skills-based workforce will ensure that we provide pathways for high road jobs in life sciences that do not require college degrees. This is necessary as Los Angeles County has a higher share of jobs held by those that do not have a four-year degree as compared to peer regions.

LA COUNTY'S DISTINCT OPPORTUNITIES FOR GROWTH

Industry research and insights from focus groups with ecosystem leaders surfaced LA County's priority growth opportunities — four areas with significant potential to increase industrial output, business growth, inclusive employment, and tax revenue for LA County. This includes one established area — biopharma, which has been a significant driver of LA County's life sciences growth to-date — and three emerging areas, where LA County has significant productive advantages that could be better leveraged to accelerate inclusive growth. The emerging areas are biomanufacturing, tech & AI convergence, and medical devices. These were prioritized based on three criteria:

1. **Growth potential and LA County's comparative advantage:**
   Where does LA County have current or potential comparative advantages? Is the area aligned with industry trends?

2. **Inclusivity:**
   Which areas are likely to generate high quality, inclusive jobs for residents of LA County?

3. **Actionability:**
   Where can DEO play a catalytic role through this strategy?

Many other opportunity areas were explored but ultimately not prioritized for this strategy.[40] Importantly, the exclusion of an opportunity from this strategy reflects the feasibility of DEO and partners to catalyze near-term inclusive growth in this area, not its broader potential or importance. Many of these opportunities warrant pursuit by other industry stakeholders. For example, expanding clinical research stands out as a promising opportunity for LA County given the region's diverse population and strong health and research organizations. However, this opportunity was deprioritized due to limited near-term potential for job growth and limited ability for DEO to influence direct change.

40. See Annex D for a long list of opportunity areas considered.

BIOMANUFACTURING: *Biomanufacturing uses cells or other living microorganisms to produce commercially viable products (e.g., vaccines, antibodies, cell and gene therapies).*[41]

For LA County, biomanufacturing offers strong potential to generate quality, inclusive jobs that will strengthen the region over the long-term. Many roles do not require a four-year degree, and LA County has invested in pioneering talent programs with anchor firms. DEO can play an active role in unlocking physical space and business environment constraints that are restricting growth.

Growth potential and LA County's comparative advantage:

Biomanufacturing is growing nationally, with contract development and manufacturing organizations (CDMOs) increasingly relocating their operations to the U.S.[42] Further, major manufacturers are shifting to focus on U.S.-based production. For example, Johnson & Johnson plans to invest $55B in expanding its U.S. manufacturing over the next four years, representing a 25% increase from the previous four years.[43] This trend offers a promising avenue for sustainable job creation. Industry stakeholders emphasize that once biomanufacturing firms establish operations and reach the growth stage, they tend to remain in place due to high up-front investment costs, the complexity of facility setup, and the need for a specialized workforce.[44] This stability makes biomanufacturing a particularly durable source of quality employment. Biomanufacturing focus group participants noted that LA County has many of the fundamentals needed for biomanufacturing, such as a skilled workforce, local manufacturing expertise, and global connectivity.[45] Manufacturing roles already comprise 32% of the County's life sciences workforce — higher than any peer region — demonstrating a well-established talent base.[46] LA County is well-positioned to focus on specialized and emerging biomanufacturing technologies (e.g., cell and gene therapy) that benefit from the region's proximity to leading healthcare and research institutions, as well as key transportation networks. However, LA County's biomanufacturing sector is not capturing its fair share of job growth. Between 2017-2022, the County's employment in life sciences manufacturing grew only 3%, lagging peer growth (e.g., 53% in New York City).[47] Growth has been limited by business environment challenges and physical space constraints as discussed earlier in this section.

Inclusivity:

Biomanufacturing stands out as an accessible career path for a broad range of workers, with over 80% of production roles not requiring a four-year degree.[48] The average annual salary in biomanufacturing in LA County is ~$100,000, which is higher than the average salary for life sciences workers without a four-year degree in LA County ($85,000).[49] This accessibility supports a diverse talent pipeline, with local institutions responding to industry needs. For example, LA Mission College has launched a biomanufacturing bachelor's degree and several related certificate programs, enrolling a majority Hispanic student body and bolstering the regional talent pipeline.

41. "Continuous biomanufacturing with microbes – upstream progress and challenges," Current Opinion in Biotechnology, 2022.
42. [a] "Nearshoring, Reshoring and Manufacturing Coming Back to North America," NAIOP, 2024. [b] "Here's Why Outsourcing to CDMOs Doubled In 13 Years," Outsourced Pharma, 2023. [c] "For Drugmakers, Outsourcing In The U.S. Brings Biomanufacturing Building Boom," Bisnow, 2024.
43. [a] "Bringing it all back home? Pfizer, Merck eye US manufacturing on back of Trump tariffs," BioProcess International, 2025. [b] "Trump tally: J&J plans $55 billion investment to expand U.S. manufacturing," Axios, 2025.
44. [a] Stakeholder interviews and biomanufacturing focus group, 2024.
45. Biomanufacturing focus group, 2024.
46. Dalberg analysis of BLS data.
47. Dalberg analysis of BLS data.
48. Dalberg analysis of award/degree data collected from the IPEDS by NCES.
49. [a] "Unmet Workforce Demand for Biomanufacturing Jobs in LA County," Centers of Excellence for Labor Market Research, 2024. [b] Dalberg analysis of BLS data.

Actionability:

Focus group participants elevated constraints to biomanufacturing in LA County including, i) long and complex permitting processes, ii) lack of affordable physical space, iii) lack of incentives that are table stakes in peer regions and iv) difficulty navigating the workforce system to find trained employees.[50]

DEO is well positioned to address all of these challenges through streamlining permitting requirements, launching targeted incentives to support expanding growth-stage biomanufacturing firms, and connecting industry to relevant workforce resources.

> **If you are talking about job creation this is an enormous opportunity… these kinds of forgotten areas of biomanufacturing should be encouraged."**
>
> — ACCELERATOR

CONVERGENCE WITH TECH & AI:

Tech and AI are integrated into the life sciences to enhance data analysis, optimize drug discovery, improve diagnostics, etc., leading to faster and more effective health solutions.

Any life sciences strategy must prioritize AI, which is quickly emerging as a transformative force for innovation and accelerating growth.

DEO should support industry partners to position this area as a priority.

Growth potential and LA County's comparative advantage:

AI is enhancing efficiency in drug discovery, personalized medicine, and clinical trials, with the global market for AI in drug development projected to grow from $1.5B to $13B by 2032.[51] LA County's top-tier AI research institutions, cutting-edge hospital systems, and thriving tech sector dubbed as 'Silicon Beach' provide a competitive edge in AI convergence.[52] However, the County lags behind peers in some key convergence areas. For instance, digital health jobs account for less than 6% of life sciences employment in Greater LA, compared to over 10% in leading peer regions.[53] In part, this can be contributed to peer regions making significant investments in multi-institution partnerships and digital infrastructure to remain at the forefront of AI-driven life sciences advancements. For example, the Chan Zuckerberg Biohub Chicago unites top universities to use AI in advancing inflammation and immune system research, while QB3, a tri-campus research institute and accelerator in the San Francisco Bay Area, has produced successful firms at the intersection of AI and biotech.[54]

50. Biomanufacturing focus group, 2024.
51. "AI in the pharmaceutical industry – statistics & facts," Statista, 2023.
52. [a] "Silicon Beach: Exploring LA's Hottest Tech Scene," Built in LA, 2024. [b] "AI Use Grows at Hospitals," Los Angeles Business Journal, 2024.
53. Dalberg analysis of QCEW data.
54. [a] "Chan Zuckerberg Biohub Chicago," CZ Biohub, 2025. [b] "The Biotech+ Idea Factory," QB3, 2024.

Inclusivity:

Despite its significant growth potential, AI convergence poses an opportunity for workforce diversification — the AI and tech sectors have historically lacked diversity, with notable racial, gender, and educational disparities.[55] To ensure that growth in this sector is both innovative and equitable, LA County must intentionally create pathways for talent in underrepresented communities to enter and thrive in AI-driven life sciences roles.

Actionability:

Focus groups elevated pain points facing inclusive growth in AI convergence in LA County including, i) limited cross-sector events that raise awareness of opportunities to collaborate between life sciences and AI sectors, ii) need for workers with specialized skills in AI,[56] and iii) the need for computing power to support AI technology. DEO can address these challenges through coordinating across sectors and stakeholders , and connecting firms to a diverse, trained workforce and/or supporting the creation of new training programs if there is a gap. To address other challenges such as the need for more computing power, DEO will need industry support.

> **[AI convergence with life sciences] is very timely, important and vital for LA and its sector's future."**
>
> —UNIVERSITY PROFESSOR

MEDICAL DEVICES:

The medical devices area refers to the development and application of equipment used for diagnostics, treatment, and patient care.[57]

LA County has the assets needed to strengthen its medical devices hub, such as its leading life sciences graduates and strong research institutions. Growth can be accelerated by collaborating with Orange County, a well-known regional hub. DEO can work with ecosystem actors to help expand in this area, with a focus on supporting early company formation.

55. "2024 Tech Industry Statistics," Forbes, 2024.
56. AI convergence focus group, 2024.
57. "Medical Device Industry Facts," AdvaMed, 2025.

Growth potential and LA County's comparative advantage:

Currently, nearly 30% of LA County's life sciences workforce — and 50% of Greater LA's — is employed in the medical devices sector. Neighboring Orange County has already positioned itself as a dominant hub for medical devices innovation, boasting an LQ of 6.1.[58] Its proximity gives Greater LA a strong comparative advantage. However, despite this closeness, LA County's medical devices subsector has an LQ of just 0.8, representing below average competitiveness. Focus group participants shared that growth has been limited by a lack of coordination with Orange County as well as broader physical space, funding, and business environment concerns that made it difficult to start new medical devices firms in the County.[59] This presents an opportunity for LA County to incubate new medical devices firms and establish itself as a key player by leveraging its deep connections to Orange County's ecosystem. Strengthening partnerships with leading industry players, research institutions, healthcare systems, and the County's skilled workforce can help solidify LA County's position in this sector.

Inclusivity:

While racial and educational diversity in medical devices are reflective of the industry overall, significant barriers exist in gender diversity, with only 35% of employees identifying as women.[60] As the medical devices subsector grows in LA County, it will be critical to create more accessible pathways into the industry for women.

Actionability:

Focus groups discussed challenges to starting and growing medical devices firms in LA County including, i) limited funding for early-stage firms, ii) lack of affordable physical space, and iii) difficultly accessing mentorship and other support for founders.[61] DEO can work with industry to address these challenges by helping early-stage medical devices firms access wraparound support resources, and facilitating collaboration with Orange County. Finally, DEO is well-positioned to support with inclusion by connecting more women with careers in medical devices.

> **"It would be great to hold events for people working in the [medical devices] space in LA. We could include [stakeholders] from Orange County — there is an advantage to interacting with each other."**
>
> —MED TECH FOUNDER

58. Dalberg analysis of BLS data, 2024.
59. Medical devices focus group, 2024.
60. Dalberg analysis of BLS data.
61. AI convergence focus group, 2024.

BIOPHARMA:

Biopharma refers to the research, development, and commercialization of drugs that prevent, treat, and cure diseases.

Biopharma has been a primary driver of LA County's life sciences growth to date, and this strong foundation will continue to create opportunities for future growth in the region.

Growth potential and LA County's comparative advantage:

Biopharma was elevated because it has been a cornerstone of LA County's life sciences sector, with innovations such as advanced cell and gene therapies driving industry expansion. Over the past decade, biopharma has been one of the County's fastest-growing subsectors, expanding by 14%, which is 5% faster than the County's broader life sciences industry. However, growth still lags behind the national industry average of 28% and falls far behind leading clusters.[62] Despite this disadvantage compared to peer regions, biopharma is a relative strength in LA County and should remain a critical pillar in the County's life sciences strategy. The region is home to biopharma industry leaders, such as Kite and Amgen, which have been key anchors for the local cluster. Additionally, the LA region has strong biopharma research, with local universities ranking third among peer regions for R&D spending (on par with Boston/Cambridge and New York).[63]

Inclusivity:

Biopharma is well positioned to create and retain inclusive jobs given that it is the most inclusive industry subsector as compared to medical devices and life sciences research and development — more than 50% of LA County's biopharma workforce is Hispanic or Black, and nearly 70% of jobs in the sector do not require a four-year degree.[64] Growth in biopharma is also closely linked to growth in biomanufacturing, which as noted above is itself a highly accessible and inclusive subset of the larger biopharma industry.

Actionability:

DEO can leverage their ability to address physical space and business environment barriers to support biopharma firms. They can also work with partners to facilitate coordination and will need support from industry actors to ensure that research developed in local institutions is commercialized and scaled here in LA County.

62. Dalberg analysis of BLS data.
63. [a] Dalberg Analysis of AUTM STATT database, 2013-2022. [b] Dalberg analysis of National Science Foundation, Rankings by total R&D expenditures, 2013-2022.
64. Dalberg analysis of BLS data.

The Strategy to Advance Inclusive Growth in LA County's Life Sciences Sector

LA County boasts many of the foundational ingredients needed for a thriving life sciences cluster, but binding constraints must be addressed to enable more entrepreneurs and firms to start, grow, invest, build, and hire in LA County. Addressing these demand-side challenges is the first step to fostering inclusive growth and expanding the availability of quality, accessible jobs for County residents — and therefore should be the County's immediate focus.

To overcome these constraints and seize opportunities in priority growth areas, LA County is implementing a four-pillar strategy to establish itself as a premier destination for end-to-end life sciences innovation, commercialization, and manufacturing (see Figure 14). The pillars, supported by eight initiatives, are designed to achieve co-equal objectives of unlocking growth and expanding equity and inclusion. Each pillar focuses on unlocking a key barrier to inclusive growth identified in the earlier factor endowment assessment:

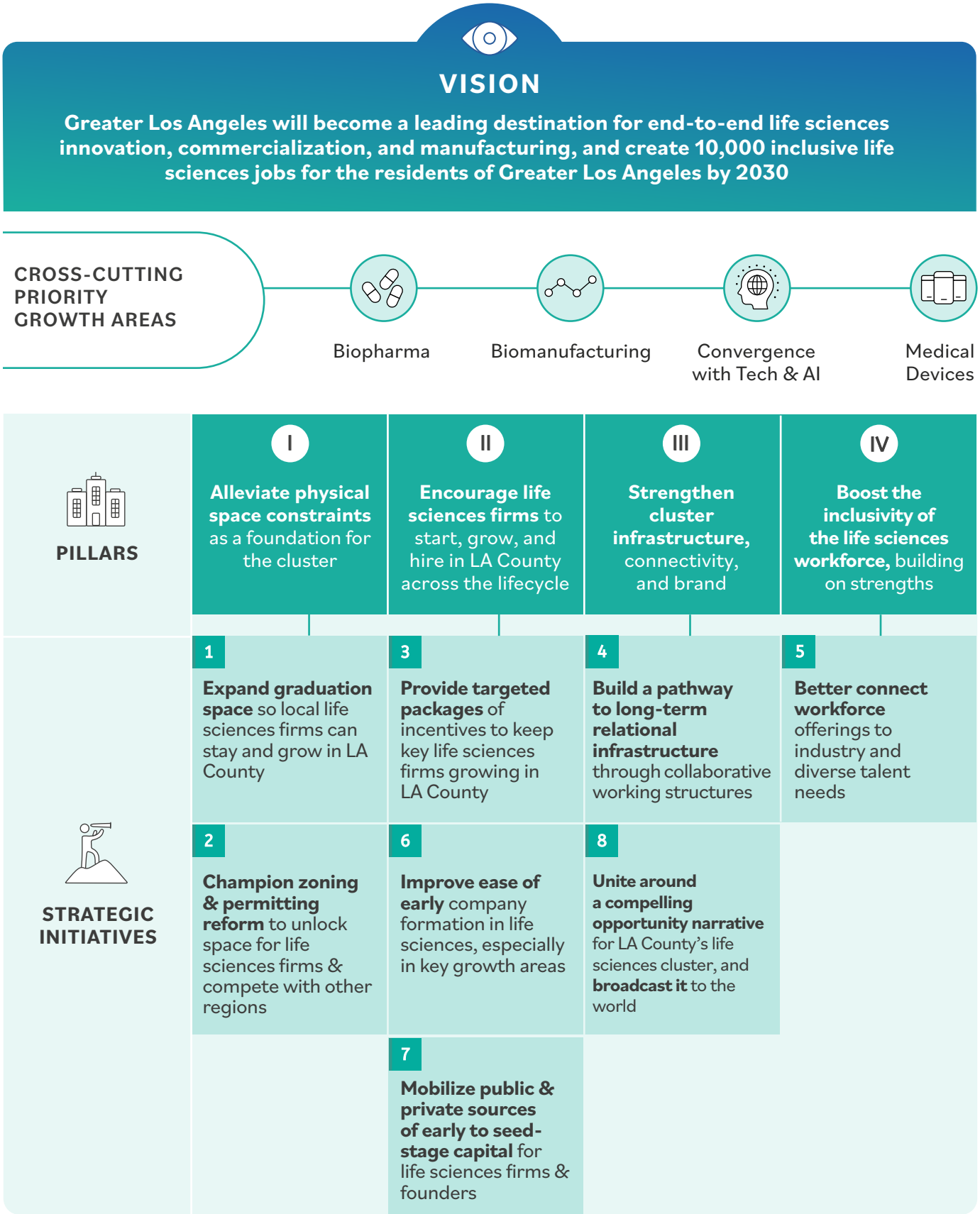
I **Pillar I alleviates physical space constraints as a foundation for the cluster.** This pillar aims to address physical capital and zoning and permitting barriers by catalyzing graduation space development and removing obstacles to building life sciences facilities.

II **Pillar II encourages life sciences firms to start, grow, and hire in LA County across the lifecycle.** This pillar aims to unlock scaling constraints facing early-to-growth stage firms across business environment, financial capital, and intellectual capital by making it easier for firms to start, secure capital, and grow in LA County.

III **Pillar III strengthens cluster infrastructure, connectivity and brand.** This pillar aims to tackle the fragmented ecosystem by strengthening relational infrastructure and building a stronger ecosystem narrative.

IV **Pillar IV boosts the inclusivity of the life sciences workforce, building on strengths.** This pillar aims to better leverage the County's strengths in human capital to expand employment pathways in underrepresented communities and support business growth.

Figure 14: LA County Life Sciences Strategy[65]



65. The job target in the vision reflects reaching national average industry job growth, conservatively (20% discount) estimated at 10k; ~4K of these jobs would be located in LA County.

If successfully implemented, this strategy has the potential to add 10,000 inclusive life sciences jobs for the residents of Greater LA by 2030. This target reflects the region's potential if it were to catch up with the national average for life sciences job growth. Of these 10,000 jobs, 4,000 will be in LA County — the core focus of DEO. LA County will be the strategy's priority, both because of DEO's role in catalyzing change and because it is the part of the Greater LA region where growth lagged the most behind national averages over the past decade.

However, this strategy is not just about closing gaps — it aims to establish LA County as a global life sciences leader by 2035. If the County catches up to the national industry growth rate by 2030, its next milestone should be to reach the level of its top-performing peer regions by 2035. Catching up with the past decade of growth in leading clusters would mean achieving a 6.5% annual growth rate between 2030 and 2035, creating an additional ~11,000 jobs over those five years in LA County alone and ~26,500 in the Greater LA region — while also retaining or expanding hundreds of firms and improving health outcomes for millions.

The success of this strategy hinges on deep, sustained collaboration between government, industry, academic institutions, and community stakeholders. Industrial development and demand-side capacity-building cannot occur in silos — partnerships and shared commitments will be key to scaling LA County's life sciences industry. While DEO is well-positioned to lead or co-lead a subset of these initiatives — Initiatives 1 to 5 — the leadership of industry partners is essential for successful implementation of Initiatives 6 to 8.

To track progress towards building a thriving and inclusive industry cluster, goals for industry and key performance indicators (KPIs) for DEO's contribution to each pillar are outlined below (see Figure 15).

Photo source: National Cancer Institute via unsplash.com

Figure 15: Strategy Goals, KPIs, and Investments[66]

VISION LEVEL KPIs:

10,000 inclusive life sciences jobs will be added for the residents of Greater LA by 2030 to catch up to national growth rates for the life sciences industry. 4,000 of these will be in LA County.

PILLARS	I **Alleviate physical space constraints** as a foundation for the cluster	II **Encourage life sciences firms** to start, grow, and hire in LA County across the lifecycle	III **Strengthen cluster infrastructure,** connectivity, and brand	IV **Boost the inclusivity of the life sciences workforce,** building on strengths
ECOSYSTEM GOALS	Significantly increase construction of affordable life sciences space, stabilizing vacancy rates at or above 5%[a]	Grow the number of viable life sciences firms starting and staying in LA County at every growth stage and establish LA County as a biomanufacturing hub	Position LA County as a global life sciences leader, attracting and retaining anchor firms, large grants, and other critical elements of a thriving ecosystem	Ensure future job growth represents the diversity of LA County and strengthen connections between employers and LA County's leading life sciences workforce system
KPIs FOR DEO	**Firm growth:** **40-60** growth stage firms directly supported over five years with access to the physical space they need to stay and grow in LA County **Job growth:** **200-600** jobs added or retained **Physical space:** **130,000 -180,000** sq ft in physical space added for life sciences firms	**Firm growth:** **40+** life sciences firms benefit from Life Sciences Strategy actions that support them to reach the growth stage **Job growth:** **200-400** jobs added, with a focus on underrepresented communities	**Public perception:** **10** percentage point increase in public perception (internally and externally) of the LA County life sciences ecosystem **Cluster collaboration:** **200** ecosystem leaders actively engaged via working groups to grow the cluster[b]	**Workforce inclusivity:** **2,000+** individuals from underrepresented communities connected with pathways into high road life sciences careers **Partnerships:** **Increase number** of partnerships between life sciences firms and the workforce ecosystem
INITIATIVE LEVEL INVESTMENTS	**1A** **$15M** repayable investment to catalyze development of two new multi-tenant graduation spaces **1B** **$10M** initial repayable investment to launch the Tenant Improvement Fund **2** **$300,000** investment and significant staff time from DRP/DEO to lead zoning and permitting reform and navigation efforts	**3A** **$20M** initial repayable investment in low-interest loans to support local biomanufacturing companies **3B** **Non-cash investment** of County-owned land and tax increment financing via EIFDs to attract larger life sciences companies to LA County	**4A / 4B** **Hire Life Sciences Liaison team** to lead implementation of the strategy and support working groups **4C** **Hire Business Retention and Expansion Lead** to build broader Coalition to help attract, retain, and grow life sciences firms in LA County	**5A** **$2M** investment in launching new life sciences HRTPs and centralizing existing workforce resources **5B** **$400,000** investment in programs to better connect underrepresented talent with life sciences opportunities in LA County
TOTAL INITIAL INVESTMENT	**$43.5M Capital Investment and 4-6 FTE Staff from DEO/DRP**			

66. [a] The goal of a 5% vacancy rate reflects doubling the current vacancy rate, which will help ease the pressure of the current physical space shortage in LA County and enable more firms to stay and grow locally. [b] Not all 200 individuals must be working group participants; this should encapsulate all stakeholders supporting working groups and their efforts, whether as formal members or informal advisors.

The sections that follow outline the evidence-based actions under each initiative, with a focus on those where DEO is best suited to lead implementation. For initiatives where industry is best fit to lead, actions are identified in this study that can serve as a starting point for industry partners to take ownership and drive implementation forward.

Photo source: National Cancer Institute via unsplash.com

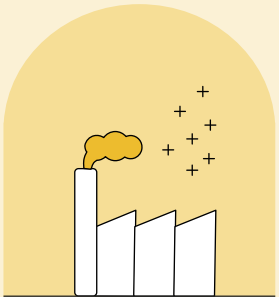
Actions to Achieve the Strategic Vision – LA County's Role

This section details five recommended initiatives that DEO should lead or co-lead. To successfully implement these initiatives, DEO will need to collaborate with relevant partners and stakeholders across the public and private sectors (e.g., DRP, industry associations, workforce development boards, etc.). Building the collaborative infrastructure needed for effective partnership will be a critical enabler and is detailed further in Initiative 4.

01. **EXPAND GRADUATION SPACE SO LOCAL LIFE SCIENCES FIRMS CAN STAY AND GROW IN LA COUNTY**
02. **CHAMPION ZONING & PERMITTING REFORM TO UNLOCK SPACE FOR LIFE SCIENCES FIRMS & BETTER COMPETE WITH OTHER REGIONS**
03. **PROVIDE TARGETED PACKAGES OF INCENTIVES TO ALLOW KEY LIFE SCIENCES FIRMS TO GROW IN LA COUNTY**
04. **BUILD A PATHWAY TO LONG-TERM RELATIONAL INFRASTRUCTURE THROUGH COLLABORATIVE WORKING STRUCTURES**
05. **BETTER CONNECT WORKFORCE OFFERINGS TO INDUSTRY AND DIVERSE TALENT NEEDS**

INITIATIVE 01.

Expand Graduation Space so Local Life Sciences Firms Can Stay and Grow in LA County



Background: Over the past decade, LA County has made significant investments in addressing the physical space needs of graduation-stage life sciences firms. The number of incubators in LA County has grown from one to more than nine in the past 15 years. More local life sciences firms are 'graduating' from incubation-stage to "growth" or development-stage, and their needs have evolved with them. These expanding firms face acute space challenges as they outgrow incubator space — incubators report that the majority of these firms end up leaving the County, most often due to a lack of affordable, move-in ready 'graduation space'.[67] These firms have the potential to grow into future anchors in LA County, but too many are forced to leave at a critical growth stage, taking thousands of potential jobs with them.

Unmet demand for graduation space is demonstrated by LA County's extremely low vacancy rates for life sciences space, at 3% overall and as low as 1% for graduation space. Industry experts estimate that demand for these spaces is in excess of 100,000 sq ft, but there is little to no new construction planned.[68] There are several drivers of this shortage:

- **Demand side:** graduation-stage firms cannot wait up to a year for new construction to be built; they require move-in-ready space that is available in a few months, if not weeks. graduation-stage firms also rarely have sufficient capital to fund new construction, and this is particularly acute in LA County due to the dearth of early-stage funding.
- **Supply side:** New development, particularly lab space, is more costly to build in LA County than in some competitor regions. Developers are also incentivized to build larger spaces for established firms, rather than riskier bespoke spaces for early-stage startups. Additionally, oversupply of life sciences real estate in peer regions such as San Diego has led to high vacancy rates and allowed them to offer lowers rents to attract firms out of LA County.[69]

> **"It takes a very long time to build out lab space, and tenants, especially at the early stage; [they] can't wait around 10 to 12 months to get into lab space. If you don't have something readily available, they'll leave and go elsewhere. That's the challenge we face now."**
>
> —BIOSCIENCE INVESTOR

This is not a challenge unique to LA County. Every leading life sciences cluster in the United States has faced a similar 'chicken or egg problem' at some point. To solve it, peer regions have leveraged public capital to catalyze the development of graduation space and rapidly grow their life sciences clusters.[70]

67. Incubators cite between 50%-85% of firms leave.
68. Citation from real estate developer. 'Graduation space' is defined as step-up, 2-5k sq ft, with lease periods of ~12 months ("Continuum of Biotech Space, Understanding your requirements," Colliers, 2024).
69. "CBRE Report: Post-Pandemic Slowdown Now Evident in Oversupply of Biotech Labs,"MedCityNews, 2024.
70. see peer region spotlight below: NYC's zoning reform, tax incentives, grad space grants and Illinois' wet lab capital grants.

PEER REGION SPOTLIGHT:
New York City's "Life Sci NYC" initiative

In New York City, a combination of specific lab improvement grants to fund graduation space, tax incentives, and zoning reform have contributed to a **41% growth in life sciences employment over the past five years** (see Initiative 2 for the peer region spotlight on New York City's zoning reforms).[71] As part of NYC Economic Development Corporation's $1B investment in life sciences, Life Sci NYC awarded $38M in infrastructure grants to fund R&D facilities at leading scientific research institutions. Another $200M will support the construction of commercial lab space and incubators. These efforts aim to create 40,000 new jobs and establish New York City as a global leader in life sciences.[72]

PEER REGION SPOTLIGHT:
Illinois wet lab capital grants

In 2021, the Illinois Department of Commerce and Economic Opportunity (DCEO) awarded $**15.4M in grant funding to leverage $90M in investments in eight new wet lab projects** to help bolster medical research and R&D. The "Rebuild Illinois Wet Lab Capital" program was launched as part of the state's five-year economic growth plan and included a matching requirement — applicants must contribute their own funds to match the state's investment, effectively doubling the total funding.[73]

DCEO focused on multi-tenant wet lab expansion in life sciences hubs "up and down the state", including in the areas surrounding key research institutions and universities. The state required funding applicants to present a plan for recruiting from underserved areas and achieve minority business participation requirements. The program prioritized projects with demonstrated partnership with incubators, universities, medical facilities, and/or businesses requiring wet lab space.[74]

Rationale for action: Without similar intervention, the conditions perpetuating insufficient and unaffordable graduation space are likely to continue and worsen in LA County. However, recognizing the high demand, developers have expressed openness to building graduation space if they could access a public subsidy, as offered in other markets. DEO should take a two-pronged approach to address distinct near-term demand side and long-term supply side gaps:

- **Long-term challenge of a lack of incentives to build graduation space in LA County despite high demand,** leading to a challenge in developing move-in ready facilities, especially multi-tenant space proximate to emerging life sciences hubs in the County.
- **Immediate shortage of affordable step-up space for graduation stage firms,** hindering their ability to stay and grow in LA County, given these firms typically lack capital to independently retrofit space for their needs.

71. [a] "Leading the Way in Life Sciences," LifeSciNY, 2024. [b] Dalberg analysis of BLS data.
72. [a] "State of the City Preview: New York City Invests $38 Million in New Biotech Centers," City of New York, 2021. [b] "A Recovery for All of Us: New York City Invests $1 Billion in Life Sciences," City of New York, 2021.
73. "Gov. Pritzker Announces $15.4 Million in Rebuild Illinois Capital Funding to Boost Wet Lab Development," Illinois Department of Commerce, 2021.
74. "Rebuild IL Wet Lab Capital Program," Village of Barrington Hills, 2021.

INITIATIVE 01.

To address the physical space shortage for graduation-stage life sciences firms in LA County, DEO should establish dedicated funds to (A) catalyze sustainable development of new multi-tenant graduation spaces long-term, and (B) subsidize immediate tenant improvements for individual, graduation-stage life sciences firms to retain them in the near-term. Both funds should be structured as low-interest loans and, as they are repaid, can contribute to the sustainability and growth (i.e., ROI) of the County's ongoing 'evergreen' fund for future reinvestment in life sciences cluster growth.

These interventions are complementary in their approaches, risk levels, and timeline to impact. Action 1A addresses long-term challenges by demonstrating the value of constructing new graduation space, derisking the investment by partnering with 'master lease holders.' In the meantime, Action 1B makes loans directly to life sciences firms to address immediate tenant-improvement needs, offering a quicker timeline to impact through unsecured loans made to a subset of borrowers (i.e., early-stage life sciences firms, which may be riskier).

NOTE ON GEOGRAPHIC CLUSTERING AND EQUITY

DEO can amplify the impact of both interventions 1A and 1B by designing for geographic clustering and equity and strategically evaluating potential locations in which to concentrate multi-tenant space and TIF recipients. Criteria for assessing and selecting locations should include i) proximity to existing life sciences clusters and anchor firms, ii) proximity to research institutions (e.g., UCLA, USC, CalTech, CDU, Cedars, City of Hope, etc.), iii) proximity to underrepresented communities and unincorporated areas that lack pathways into the life sciences, iv) ability to leverage underutilized or low-cost space, and v) dispersion across Supervisorial Districts. Situating space proximate to existing concentrations of life sciences firms and institutions can contribute to the development of life sciences hubs within the County and bring compounding benefits to both tenants and the surrounding area. Over-indexing on geographic dispersion risks mitigating some of the catalytic impact of these developments. However, the County should avoid imposing too many restrictions on where developers and firms must build or risk adding complexity that limits their ability to respond to market needs, reducing the accessibility and benefits of this initiative.

ACTION 1A : Catalyze development of two new multi-tenant graduation spaces for life sciences

Provide $10-15M in low-interest loans to 'master lease holders' to catalyze the development of two new multi-tenant graduation spaces. These spaces would provide an additional 30,000-40,000 sq ft each containing around 10 modular 2,000-5,000 sq ft spaces to sublease to graduation stage firms. This intervention would directly enable 15-25 graduation-stage firms to stay and grow in LA County at any given time and can serve as a demonstration project to encourage additional investment from private and public sources to further develop such spaces. A 'master lease holder' is an organization that leads the development of an entire space and is responsible for subleasing spaces to early-stage firms. Potential master lease holders could include universities, research institutions, mid- to large-sized life sciences firms, or developers. They will be selected through an RFP process based on criteria such as construction efficiency, matching capital, unrestricted ability of firms to sublet space, and commitment to inclusivity.[75]

75. This recommendation does not mandate "set asides" for master lease holders but rather encourages targeted outreach efforts to award leases to underrepresented firms and founders.

ADVANTAGES OF THIS ACTION INCLUDE:

Lower risk profile: Partnering with master lease holders to develop multi-tenant space lowers the risk of constructing space for early-stage firms with higher failure rates, as financial viability does not depend on individual firm success. This is especially true amid high demand for such affordable space in the County and given that the loan can be secured by the physical asset.

Larger scale and catalytic impact: This intervention aims to crowd in significant private investment, amplifying the impact of DEO's investment. It will also create ongoing space for 15-25 firms to stay and grow in LA County, serving many vintages of life sciences firms, rather than placing bets on individual firms, as a venture fund or fund-of-fund strategy would.

Geographic clustering and equity: See note above. Specific locations to consider for the new multi-tenant graduation spaces include the County-owned land at CDU and General Hospital, as these locations would meet many of the criteria noted above and include the possibility of providing low-cost land in lieu of a cash loan.

Inclusive lease awards: Once these spaces are constructed, master lease holders should prioritize outreach efforts and recruitment of underrepresented founders and firms, following the example of the Illinois Wet Lab Capital program.[76]

ACTION 1B: Fund immediate tenant improvements to enable firms to stay & grow in LA County

Establish a $10M tenant improvement fund (TIF) to provide low-interest loans for life sciences-specific tenant improvements directly to 10-15 early-stage life sciences firms. This will allow for loan amounts from $500,000-800,000 per tenant. Depending on additional demand, DEO should consider adding an additional $10M in funding to the TIF for years 3-5, which would serve 15-20 additional firms.

The funds will be flexible, enabling these firms to optimize for their individual location and design needs, rapidly outfitting graduation step-up spaces that they could not have afforded in LA County otherwise. Funds should cover both basic wet lab conversions (e.g., infrastructure needs including specialized electrical and plumbing systems, HVAC modifications) and specialized equipment purchases (e.g., incubators, sequencers, servers with GPUs).

When establishing the TIF, DEO should consider concessionary loan structure elements given many early-stage firms are pre-revenue, including potentially: i) a five-year repayment period, ii) deferred payments (e.g., starting after 1-2 years), iii) low interest rates (e.g., fixed WSJ prime rate as is used in DEO's Manufacturing Revolving Loan Fund), and more.[77]

76. Note: This recommendation does not mandate "set asides" for master lease holders but rather encourages targeted outreach efforts to award leases to underrepresented firms and founders.
77. Note: Delayed loan repayments and below market interest rates provide important flexibility for firms at this early stage. The five-year repayment period reflects likely time until life sciences firms next funding rounds and reflects an estimated time in graduation space of 2-3 years.

ADVANTAGES OF THIS ACTION INCLUDE:

Direct impact: These loans directly support local life sciences firms in need of graduation space in LA County and at risk of leaving if they do not get it. Over five years, the TIF can support as many as ~25-35 firms, creating or retaining ~125-350 jobs.

Alleviation of urgent needs with existing funds: This intervention can leverage and quickly deploy DEO's $5.8M in remaining funds designated for life sciences cluster development to address a binding constraint on life sciences growth in the County.

Shorter construction timelines: Recipients can use loans to outfit pre-existing, 'warm shell' developments which can be operational within as little as 8-12 weeks.[78]

Geographic clustering and equity: See note above.

Inclusive loan awards: DEO can prioritize outreach and selection criteria that ensure recipients represent the full racial, gender, and geographic diversity of LA County.

Table 2: How to action Initiative 1

	IMMEDIATE NEXT STEPS	IMPLEMENTATION TIMELINE	RESOURCING REQUIREMENTS
ACTION 1A	• **Convene a working group of key stakeholders** (see Initiative 4) to finalize design and assess priority geographies • Establish appropriation for **$10-15M**	• **0-6 months:** Conduct actions detailed in "immediate next steps" • **6 months — Year 2:** Design, launch, and close an RFI and a public RFP to master-lease holders. Begin disbursing funds to master lease holders. Constructing both spaces may take through Year 2 of the strategy • **Year 3+:** Open spaces to tenants	• **Designated time from the DEO** Life Sciences Liaison • **Requires investment of $10M-15M** in new funding (an average value of $5-7.5M per development) to subsidize construction and catalyze additional investment

78. Note: 'Warm-shell' developments are pre-existing buildings that have been developed with near-ready fittings needed by tenants e.g., mechanical electrical and plumbing, gas lines, etc., which can be quickly converted to 'turnkey', move-in ready facilities – timelines cited in interviews with real estate developers.

ACTION 1B	• **Secure $10M in funding** for tenant improvement fund loans, including repurposing $5.8M in existing funds for the life sciences • **Design and launch the tenant improvement loan fund**, including input from the graduation space working group noted above	• **0-6 months:** Prepare to launch the TIF through actions detailed in "immediate next steps" • **6-12 months:** Launch the fund. This will require creating an application, reviewing applications, and making selections before funds can be disbursed — and firms begin to use this funding to stay and grow in LA County.	• **Designated time from the DEO** Life Sciences Liaison • **Requires ~$10M** in funding for low-interest loans for tenant improvements by eligible life sciences firms ($500,000 -$800,000 each) • **Potential for an additional $10M request** in Y3 to meet future demand

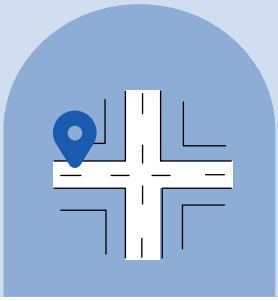
INTENDED IMPACT:[79]

- **130,000 — 180,000 sq ft of graduation step-up** space created across LA County — space that will remain and catalyze growth via many additional generations of graduation-stage firms which will benefit in future years
- **40-60 firms supported** to stay and grow in LA County in the short-term and many more in the long-term as future cohorts of graduation-stage firms utilize this space
- **Add or retain 200-600 new jobs at life sciences firms** in the short term, with the potential for significant future job creation as these firms stay and grow in LA County
- **$100M or more in private capital mobilized** to complete the remaining costs of these developments that might not otherwise have been invested in LA County
- **Increased development of life sciences real estate** sufficient to stabilize the County's life sciences vacancy rates at or above 5% by 2030 [overlapping impact with Initiative 2]

79. The intended impact figures assume an additional $10M in TIF funds for years 3-5, for a total of $20M in TIF funding over 5 years.

INITIATIVE 02.

Champion Zoning & Permitting Reform to Unlock Space for Life Sciences Firms & Better Compete with Other Regions



Background: Zoning and permitting regulations in LA County are more restrictive and complex than in peer life sciences hubs, creating two critical constraints for life sciences firms looking to build or expand facilities: (i) where and what life sciences developers and firms can build — which is currently limited by the County's narrow zoning for life sciences and stringent development standards; and (ii) how long it takes to build — which is limited by long permitting timelines and challenges navigating bureaucracy. These bottlenecks do not just slow down construction; they significantly increase costs and actively push firms out of LA County to regions with friendlier environments for life sciences development.

> **"Broadly [we] can bucket [life sciences] into R&D space and industrial space… Industrial is… certainly available throughout LA depending on the location, but it's not typically what R&D life sciences users are looking for."**
>
> —LIFE SCIENCES DEVELOPER

Where and what life sciences developers and firms can build in depends on the County's zoning code, which limits life sciences uses to a small subset of zones that do not account for the industry's diverse needs. For example, life sciences research and production are prohibited in most commercial zones, which precludes the kind of mixed-use development — in which laboratory space is located adjacent to office space and other amenities — that has been a hallmark of life sciences growth in peer regions. In addition to geographic limitations, the County's Title 22 zoning code also sets stringent development standards that may not reflect modern life sciences operations. These include building height limitations, hazardous waste disposal requirements, ventilation system mandates, and parking provisions, many of which were written for older manufacturing industries and may not reflect the needs of today's modern life sciences industry.

Meanwhile, peer regions have conducted successful zoning reform to unlock life sciences growth — such as the San Francisco Bay Area, San Diego, and in LA County's own City of Pasadena — by modernizing their base zoning codes. These reforms mainly focused on allowing research and testing laboratories in mixed-use zones, recognizing their cleaner footprint compared to other life sciences uses.[80] New York has taken this a step further by permitting such facilities in residential zones (see peer region spotlight below).[81] Pasadena's 2023 life sciences zoning reform can also serve as a model for the broader County. As part of the reform, planners identified outdated height limits and rigid hazardous materials handling rules as key barriers that prevented the adaptive reuse of existing buildings for lab spaces.[82]

80. Stakeholder interviews, 2024.
81. "New York City Aims to Bolster the Life Science, Laboratory and Biotech Economy with its "City of Yes" Zoning Text Amendments," Culver/Ledyard, 2024.
82. "Case Study: City of Pasadena," Biocom California, 2024.

PEER REGION SPOTLIGHT:
New York City's zoning reforms for economic opportunity

Until recently, New York City's zoning code had barely changed since 1961. Life sciences firms in particular faced uncertainty about where and how they could operate in the City.[83] In 2024, the City Council adopted the "City of Yes for Economic Opportunity" initiative, proposed by the Mayor and Department of City Planning, including a range of zoning text amendments to address limits that were "out of step with a 21st Century economy." A set of key amendments targeted growth in the life sciences industry, including: (i) allowing laboratories in all commercial zones (with small exceptions) and in certain residential zones, (ii) simplifying and modernizing how a laboratory is defined, and (iii) broadening an existing special permit for scientific research and development facilities that allows labs to set up close to hospitals and universities.[84] These reforms fit into the City's broader efforts to reduce vacancies and facilitate economic growth by "boosting growing industries," including the life sciences.

Developers have cited how long it takes to gain approvals for life sciences developments in LA County as a bigger barrier than even construction costs or financing and noted that permitting processes are significantly faster and easier to navigate in other regions. The longer approvals take, the more likely firms are to face pressure (from funders, boards, partners) to look at competing markets where projects can get off the ground faster and with more certainty. Three overarching permitting challenges stand out as acute barriers to life sciences real estate development in LA County:

- **Delays that kill deals:** Developers report that it can take up to nine months to secure permits in LA County, putting local projects at a disadvantage compared to peer regions. This is especially true for fast moving life sciences start-ups who face significant financial and competitive pressure to get facilities built quickly.

- **Fragmented processes and approvals:** LA County is a complex regulatory environment, comprised of 88 cities and the County's unincorporated areas, each of which have their own zoning and permitting requirements. The lack of coordination between these jurisdictions can create additional burdens for life sciences developers.

- **Opacity of system navigation:** Even with additional support in unincorporated areas from DRP's Life Sciences Permitting Liaison, firms and developers report a lack of clarity on how to navigate different agencies and jurisdictions across LA County, confusion over who to call to move projects along when they get stuck, and uncertainty over permitting timelines.

> **We have a ton of bureaucracy; the licensing and permitting to open a company is very lengthy. Companies wait nine months for a permit while still having operating costs like paying loans."**
>
> —GOVERNMENT OFFICIAL

These challenges are not unique to LA County, and many peers have taken targeted action to successfully address delays with life sciences permitting approvals. For example, San Diego launched an user-paid permitting express service called "Express Plan Check" that offers 40-50% faster reviews for a fee, on top of a life sciences-specific "Accelerator" that assigns a single project manager to priority life sciences projects (see peer region spotlight below).[85]

83. "City of Yes for Economic Opportunity," NYC Department of City Planning, 2024.
84. "City of Yes for Economic Opportunity," NYC Planning, 2024.
85. [a] "Express Plan Check," City of San Diego, 2024, [b] "Life Science Industry Accelerator," City of San Diego, 2024.

Similarly, Fredrick County in Maryland offers expedited permitting for life sciences projects based on a points system with criteria such as job creation, capital investment, and average annual salaries.[86] This process has helped advance life sciences development in the county, such as a $16M and 180,000 sq. ft. manufacturing space for Australian infectious disease company Ellume in 2021.[87] Pennsylvania's "Permit Fast Track Program" also leverages a publicly accessible online dashboard to ensure accountability for both state agencies and project sponsors.[88]

PEER REGION SPOTLIGHT:
San Diego's Life Sciences Accelerator for expedited permitting[89]

In 2021, San Diego ranked last in average permit approval timelines compared to 20 peer cities (and last among CA peers). San Diego Regional EDC convened a Life Sciences Taskforce of industry stakeholders, including 25 life sciences firms, to identify obstacles to growth and create actionable solutions. Based on these convenings, EDC partnered with the City's Development Services Department (DSD) to launch a pilot program in March 2023, assigning each life sciences project a dedicated Development Project Manager and providing a streamlined, expedited process. After just one month, processing times dropped 11%, and within eight months, DSD met nearly all review dates across all divisions.

The program became permanent in March 2024 as the Life Sciences Accelerator, offering four tiers of prioritization based on project type (e.g., tenant improvements for life sciences firms in tier 1, new construction in tier 2, etc.) and favoring projects within the federally designated San Diego Promise Zone. The program also ensures life sciences projects are reviewed by plan reviewers with specific knowledge of life sciences industry processes and issues.

These permitting reforms come after San Diego expanded mixed-use zoning in 2019 to allow for large development projects that blend dense housing with commercial and industrial uses, which was highly supported by life sciences developers and leaders. In 2024, San Diego City passed San Diego University's Community Plan Update, a land use policy that creates more opportunities for mixed-use development connected to the University of California San Diego. The effort was five years in the making and "will dictate the development of the life sciences hub over the next decade."[90] Both these zoning reforms and the establishment of the Life Sciences Accelerator were advised by Biocom.

Rationale for action: In the near-term, LA County needs to better support life sciences companies in navigating the complex existing zoning and permitting regulations. But to address the root of the problem, more substantial changes are needed. Zoning and permitting reforms have proven successful in peer regions to remove constraints to growth in their life sciences clusters. These changes are relatively inexpensive, directly within the County's control, and send a powerful signal that the County is committed to improving the business environment for life sciences firms. Furthermore, the Governor's waiving of CEQA requirements to accelerate wildfire recovery at the beginning of this year underscored the need to streamline building requirements across industries and showed that change is possible. More intentional, long-term reforms to modernize zoning regulations and permitting processes in the County has the potential to generate large-scale, inclusive economic benefits in life sciences and beyond.

86. "Life Sciences & Biotech," Frederick County MD Office of Economic Development, 2025.
87. "Ellume to Open Diagnostics Manufacturing Facility," Frederick County MD, 2021.
88. Pennsylvania Department of Community & Economic Development, 2024.
89. [a] "Express Plan Check," City of San Diego, 2024, [b] "Life Science Industry Accelerator," City of San Diego, 2024. [c] "San Diego Promise Zone," City of San Diego, 2025.
90. [a] "San Diego loosens zoning to encourage neighborhoods combining housing with jobs," San Diego Tribune, 2019. [b] "A Recap of Policies That Shaped the Life Science Industry in 2024," Biocom California, 2024. [b] San Diego University Community Plan Update, 2024.

INITIATIVE 02.

DEO, DRP, and relevant officials from incorporated areas of LA County should partner to identify, design, and enact high-yield zoning and permitting reforms in both the long- and immediate-term. To do so, these leads should first establish a working group to directly engage a cross-section of industry and community leaders and understand their specific needs, challenges, and concerns.[91]

The goal of reforms should be to unlock constraints on life sciences (and other industry sectors) firms and enable inclusive growth in collaboration with local communities, and co-design is an essential part of this process.

ACTION 2A: Reform zoning codes in unincorporated LA County, in partnership with incorporated areas, to expand where and what life sciences developers and firms can build.

LA County DEO and DRP should work with industry and community leaders to undertake a full review and long-term reforms of LA County's zoning code in Title 22 to unlock life sciences growth. This effort aims to apply reforms to base zoning code requirements to expand available physical space for life sciences uses across the County, and work with willing cities to harmonize regulations across jurisdictions. This will require detailed analysis of the current zoning code and consultation with industry actors to understand and address pain points (linked to Action 2C).

DEO and DRP should:

i. **Engage industry to collect 'best-practices' to address common challenges related to zoning and permitting for life sciences in Greater LA and develop a model ordinance (likely via an industry association like Biocom).** Such an ordinance could inform zoning and permitting reforms undertaken by LA County as well as potential partners in incorporated areas. As a starting point, the County should examine key reforms enacted in the City of Pasadena that may be applicable to the County at large, including but not limited to:

- Modernizing key definitions, such as removing distinctions between office and non-office R&D uses, given that life sciences facilities often integrate laboratories, offices, and research spaces.
- Permitting biotech R&D and manufacturing by-right in industrial zones, as done in East Pasadena.
- Eliminating Conditional Use Permit (CUP) requirements for major construction projects over 25,000 square feet.
- Allowing an extra 12 feet by-right and provided mechanisms for further height increases through a Minor Conditional Use Permit (MCUP).
- Adopting a uniform parking ratio of two spaces per 1,000 square feet for all R&D land uses.
- Increasing the permissible rooftop coverage to 75% for appurtenances up to 18 feet in height, accommodating the technical requirements of life sciences operations.

91. Participants in a zoning and permitting working group could include: life sciences developers, industry representatives across different stages of the value chain (R&D through to biomanufacturing), and with different requirements (e.g., AI convergence, medical devices, and biotech), diverse representation including founders of color, and female founders (e.g., via incubators and Women in Bio), incubators and university technology transfer offices, life sciences specific community organizations, community economic development organizations, and others.

ii. **Partner with willing cities, notably the City of LA, to harmonize regulations across County jurisdictions.** All cities' economic development and planning leads should be advised of the opportunity to join County-convened industry working groups and supported in enacting recommendations contained in the model ordinance and best practices document. Proactive approaches should be made to the City of LA,[92] cities with existing life sciences hubs, and cities that aspire to create more life sciences jobs in the future and may not have the resources to undertake zoning reform on their own.

iii. **Review Title 22 (LA County zoning code) to propose amendments to expand life sciences activities with by-right development (ministerial approval).** An industry and community working group, convened by DEO, DRP, and Biocom, should convert industry's 'best practices' into an applied set of recommendations of amendments to LA County's zoning codes. Amendments should consider not only expanding which zones are open to life sciences uses, but also alleviating excessively limiting conditions placed upon life sciences developments, especially the standards in Title 22 Division 6.

ACTION 2B: Streamline permitting requirements to remove hurdles, excess costs, and delays for life sciences developments.

DEO and DRP should work with relevant agencies, industry, and community leaders to identify, propose, and enact reforms to permitting processes and requirements that streamline and expedite the approval process for life sciences projects and unlock impactful innovation and economic development opportunities for the County.

To do this, the Liaisons from each organization should jointly lead the effort to:

i. **Establish an EPIC-LA Life Sciences Classification.** First DRP and DEO should work together to establish a clear methodology within the County's EPIC-LA System to categorize and track life science permit applications, addressing the current challenge where such projects are routinely identified as "medical offices" or other facilities. This will help ensure improved tracking of permitting processes across the county.

ii. **Identify pain points for life sciences firms in current permitting requirements and processes by conducting a 'post-mortem' analysis of recent projects.** DRP should identify 5-7 examples of projects where permitting hurdles prevented projects from being successful or caused lengthy delays. A post-mortem analysis of unsuccessful or delayed projects should identify a) which parts of the process caused the greatest delays, b) what were likely causes, and c) what solutions could prevent such delays or failed permits in future (similar to process undertaken in San Diego). This should include a broad sample set (e.g., a mix of large traditional companies and smaller firms with specific needs) that covers the full spectrum of permitting requirements and processes.[93]

iii. **Convene relevant County Departments to stack hands for necessary reforms to requirements and processes.** DRP's Life Sciences Permitting Liaison, building on their role convening agencies around specific projects (LA County's one-stop counseling service), should convene relevant County departments to prepare permitting reforms based on results of the post-mortem. Departments may include the Fire Department, Department of Public Works, and others as recommended by the specific reforms surfaced by industry and experts.

iv. **Launch efforts to speed up permit processing times.** DEO and DRP should review implementation to date of the LA County Small Business Permit Express Program and consider expansion to the Life Sciences and possibly other priority sectors. This could include setting a benchmark for reduced average permit approval times, life sciences specific training and dedicated resourcing in relevant permitting departments for life sciences project reviews (as included in San Diego's model)[94], and fast tracks for expedited approvals (as done in Frederick County Maryland and the state of Pennsylvania).

92. As the largest city in LA County, and given life sciences developers have raised concerns with City zoning and permitting specific concerns, e.g., zoning regulations that allow R&D but restrict the necessary chemicals for life sciences R&D (Biocom, 2024; Stakeholder interviews, 2024).
93. Stakeholder interviews, 2024.
94. "Express Plan Check," City of San Diego, 2024.

ACTION 2C: Help firms navigate zoning and permitting regulations via DEO and DRP Life Sciences Liaisons

In the immediate-term, DEO and DRP Life Sciences Liaisons should work closely and proactively together to offer a 'white glove service' that helps life sciences firms address uncertainty and successfully navigate the regulatory complexity of LA County.

Specifically, **DEO's Life Sciences Liaison can help firms navigate the permitting process by:**

i. **Supporting and advocating for life sciences firms** building or expanding facilities across both incorporated and unincorporated LA County, including connecting them with relevant County and City departments, helping them answer questions about the development process, and working with them to address roadblocks as they emerge.

ii. **Proactively networking** alongside industry associations (e.g., Biocom) with industry stakeholders, particularly life sciences developers, brokers, and consultants, to identify and prepare for high-potential, catalytic development projects across the County, pulling in Department of Regional Planning (DRP) as needed.

iii. **Establishing and publicizing an updated list of key economic development and permitting official points of contact** in incorporated and unincorporated areas of LA County and reaching out as needed to help life sciences firms address hurdles in those jurisdictions.

iv. **Working with DEO, the County, and industry to publicize reforms** (e.g., outcomes of Actions 2A & 2B) via official websites and other digital platforms and as part of a County-wide marketing campaign (see Initiative 8).

DRP's Life Sciences Permitting Liaison can play a more proactive role in accelerating key life sciences projects through regulatory hurdles, including:

i. **Proactively calling all active and potential life sciences developments** in unincorporated areas of LA County (and advocating for incorporated jurisdictions to do the same) to offer support, including directing firms to the one-stop permitting facilitation service (to be informed by consultation with industry associations and life sciences brokers and developers).

ii. **Building a baseline dataset and dashboard to monitor permitting improvements** on life sciences projects and developments across LA County (e.g., permitting processing times and post-permitting applicant satisfaction surveys), potentially similar to Pennsylvania's dashboard approach. A critical element will be the addition of life sciences specific classifications within EPIC-LA (as identified in 2B) to help, thus providing a reliable tracking system for life sciences permits. Baseline data collected can be used to set public goals for improving permit approval timelines.

iii. **Preparing example 'user journeys'** or one-page summary case studies with step-by-step 'how to' guides for the most common life sciences developments, so firms and developers have clarity on how to navigate zoning and permitting processes.

iv. **Advertising services the Liaison provides** via key industry conferences, outreach to life sciences incubators, etc.

Table 3: How to action Initiative 2

	IMMEDIATE NEXT STEPS	IMPLEMENTATION TIMELINE	RESOURCING REQUIREMENTS
ACTION 2A	• **Prepare detailed project plan** to coordinate resourcing, tasks, and timeline with DRP • **Begin regulatory review** and ordinance drafting	• **0-6 months:** Conduct activities detailed in "immediate next steps" and present ordinance detailing proposed zoning changes to LA County Board of Supervisors (Board) • **6 months-Year 3:** Entry into force of revised zoning and permitting regulations will require a minimum of 2 years (given probable need for CEQA review)	• **Designated time needed from DEO Life Sciences Liaison,** DRP Life Sciences Permitting Liaison, and additional DRP staff (Supervising planner, Zoning expert, and Permitting expert) over 2.5+ years • **$200,000-$300,000** for a land use regulation consultant at DRP within 6-12 months
ACTION 2B	• **Begin-post mortem review** of past unsuccessful or delayed projects • **Explore actions** to speed up permitting times	• **0-6 months:** Conduct activities detailed in "immediate next steps" • **6-12 months:** Launch targeted programs to expedite current permitting processes • **12 months and beyond:** Broader reforms to Title 22 permitting requirements would need to be included in zoning and permitting reforms in Action 2A	
ACTION 2C	• **DEO Life Sciences Liaison to call all** live and potential developments to offer support • **Start list of key contacts** across Cities in LA County	• **0-6 months:** Gather data and begin reaching out to industry • **6 months and beyond:** Conduct proactive outreach to all developments, launch lists of key permitting officials and user journey maps, etc.	

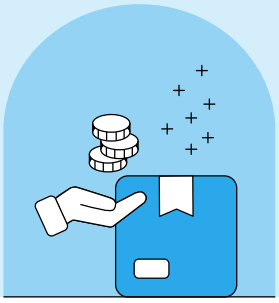
INTENDED IMPACT:

- 10% average reduction in project approval times for life sciences-oriented development projects in the first two years after enacting reforms (via survey)
- Increased YOY stakeholder satisfaction with zoning and permitting processes (compare benchmark/subsequent surveys)
- Increased development of life sciences real estate sufficient to stabilize the County's life sciences vacancy rates at or above 5% by 2030 [overlapping impact with Initiative 1]

Photo source: LA Department of Economic Opportunity

INITIATIVE 03.

Provide Targeted Packages of Incentives to Allow Key Life Sciences Firms to Grow in LA County



Background: As identified earlier, LA County boasts numerous assets that appeal to local and global life sciences firms. Yet its challenging and costly business environment often deters firms from choosing to expand in the region.

In recent years, this challenge has intensified as peer regions have made sweeping incentives programs "table-stakes" as a tool to attract and retain companies, making it even more difficult for LA County to compete. All non-California peer regions have launched, or are preparing to launch, robust initiatives to spur company and job growth.[95] For example, the Massachusetts Life Sciences Center Tax Incentives Program has awarded $334M in tax incentives to 236 companies since 2009, creating more than 18,000 jobs.[96] This is one of many programs supporting life sciences in Massachusetts; others include the MassBioEdge purchasing program that saves members $300M per year by providing them discounts on supplies and services, and the Building Breakthroughs program, which provides capital for biomanufacturing innovation projects.[97]

By contrast, LA County's incentives are both limited and often industry-agnostic, failing to meet the unique needs of life sciences firms and, therefore, remaining largely underutilized. In a series of industry focus groups conducted in 2024, participants repeatedly noted that they wanted to stay and grow in LA but pointed to the difficult business environment as a major barrier to doing so. They also noted how relatively low-cost programs — such as tax abatements and expedited permitting support — could provide significant incentives for local life sciences companies to expand operations and create jobs in LA County.

> **"[Well-established companies in LA] want to expand what we already have here, but the struggle is that it is easier to get tax incentives in other states than it is to even just expand on our own property, which would bring more jobs to the area."**
>
> —LARGE LIFE SCIENCES FIRM IN GREATER LA

Rationale for action: To grow the number of inclusive life sciences jobs in LA County by 2030, it will be essential not only to increase support for early-stage firms but also to secure larger-scale expansions from both local and global companies and to attract potential life sciences anchors (i.e., headquarters) from other regions. In the near-term, this will require reducing the 'incentive gap' between LA County and peer regions. The LA County Board recognized the important role incentives play in business retention and expansion when it passed a motion supporting an expansion of the CA Film and Television Tax Credit Program in 2024 to retain film and television production; the same underlying logic to deploy targeted incentives applies in the life sciences.

Biomanufacturing is LA County's most immediate opportunity to create quality, family-supporting, middle-skill jobs given the region's comparative advantages.

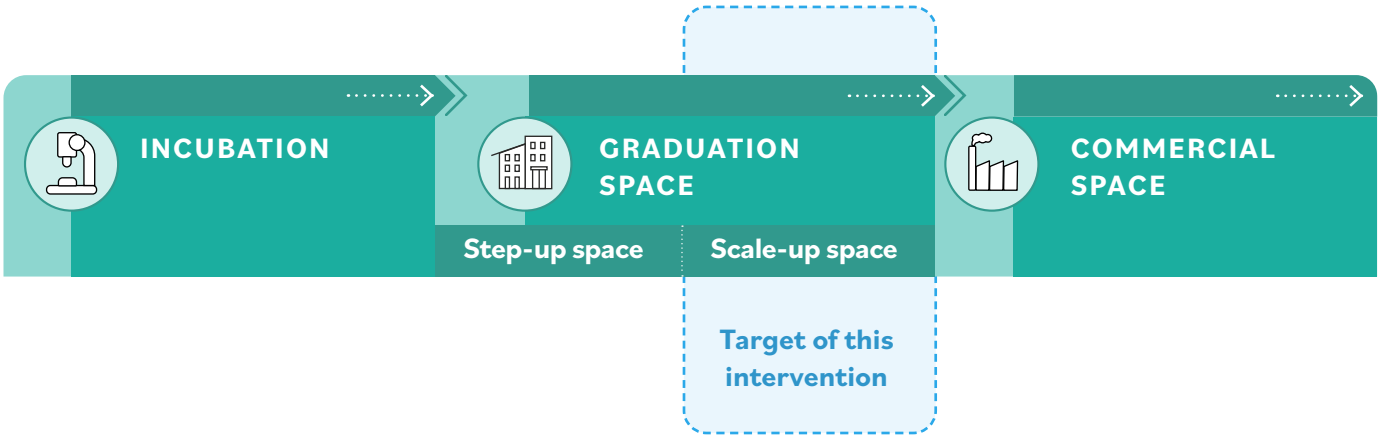
95. [a] "Tax Incentive," MLSC, 2024. [b] "What NYC Property Owners Need to Know about Life Sciences Real Estate Tax Incentives," Commercial Observer, 2024. [c] "NYC Biotechnology Tax Credit," NYC Department of Finance, 2024. [d] "North Carolina Economic Development Incentives," BLS & Co, 2023; [e] "Houston's Life Sciences Sector on the Verge of a New Era," Greater Houston Partnership, 2024. [f] "Texas Business Incentives & Programs Overview," Office of the Texas Governor, 2024. [g] "Open for Business Illinois' 2024 Economic Growth Plan," Illinois Department of Commerce, 2024. [h] See Annex E for examples of incentives launched in peer regions.
96. [a] "Tax Incentive," MLSC, 2024. [b] "16th Round of Tax Incentive Launches Today," MLSC, 2024. [c] "Healey-Driscoll Administration Announces More than $21 Million in Tax Incentives for 19 Massachusetts Life Sciences Companies,"Mass.gov, 2024.
97. [a] "Empowered Purchasing," Massbio, n.d. [b] "MLSC Building Breakthroughs," MSLC, 2024.

Attracting and retaining biomanufacturing firms can create more of these accessible middle-skill jobs and do it sustainably since biomanufacturing facilities are long-term investments that are unlikely to leave the region once built. However, in today's fiercely competitive global life sciences market, every nascent, emerging, and established life sciences cluster is vying to attract these biomanufacturing facilities and the resultant jobs. In conversations with global biomanufacturing experts and site selectors, they noted that incentives are now considered pre-requisites for any new biomanufacturing investments, and LA County must keep up to remain competitive.

Business retention, expansion, and attraction incentives will also help to ensure that the County supports homegrown companies at their most rapid phase of growth, where the economic impact of incentives investment is greatest. Firms moving to scale-up space — facilities for companies transitioning from R&D to commercialization — are often building pilot-stage manufacturing sites, which typically cost $10-20M and can have around 50 employees.[98]

Firms tend to stay and grow wherever they build their pilot facilities, making it essential to retain firms in LA County at this stage. Given the funding challenges firms face in LA County, pilot stage is often where firms see the greatest pressure to relocate to be closer to investors or tap into substantial incentives.

> **Once a company gets to its 10th employee there's a 90% chance they're going to stay and grow wherever they are."**
>
> —INCUBATOR



98. [a] "Life Sciences Fit Out Costs Guide," Cushman & Wakefield, 2024. [b] "Pilot Bioproduction Facility," WRAIR, 2020.

INITIATIVE 03.

LA County should award tailored incentive packages to select growth stage life sciences firms that commit to creating quality and inclusive jobs in LA County. This initiative should be led by DEO and a broader coalition of partners focused on Business Retention and Expansion (BRE) — coordinated by DEO's BRE Lead and supported by the Life Sciences Liaison (see Initiative 4) — who will review applications and select firms with strong potential for inclusive job creation.[99]

This two-phased action is designed to use targeted incentives to deliver "quick wins" in company growth and inclusive job creation by enabling growth-stage firms to invest, grow, and hire in LA County.

During the first two years, the County should distribute incentives to ~10 mostly local biomanufacturing applicants with significant potential for local inclusive job creation, building off programs already in place. In year three and beyond, the County should launch incentives to meet the needs of a broader range of larger and global firms and distribute incentives to ~10 firms per year.

After the incentive program's foundation is in place, DEO and the BRE Coalition should expand it to consider the needs of life sciences firms in other priority growth areas. For example, additional packages could be launched to meet the specific needs of AI convergence and medical devices firms.

ACTION 3A: Short term: Offer enhanced & existing incentives to firms with significant local job creation potential (mostly local firms)

In the immediate-term, DEO and the BRE Coalition (detailed in Initiative 4) can provide support to local biomanufacturing firms looking to build scale-up space. Support and incentives detailed in Action 3A should be provided to up to five firms per year during years 1 and 2. Starting at this small scale will allow DEO to focus their resources on launching the incentives program and testing it with select firms.

Proactive support and incentives can include:

1. **Supporting life sciences firms to better utilize (local, county, state) subsidies that are already in place. Existing subsidies to leverage could include:**

    - Partner with Southern California Edison to expand their utility abatements offering and help life sciences firms utilize abatements that already exist.[100]
    - California Competes Tax Credit.
    - CA R&D Tax Credit.
    - Work Opportunity Tax Credit.
    - Workforce training grants (e.g., Packaging of OJT, ETP Funding and youth workforce programs.
    - Support developing customized training programs (including HRTPs).

99. DEO should ensure that incentives are awarded to firms in a variety of geographic locations by assessing criteria including, i) proximity to existing life sciences clusters and anchor firms, ii) proximity to research institutions (i.e., UCLA, USC, CalTech, Cedars, City of Hope, etc.), iii) proximity to underserved communities that lack pathways into the life sciences, iv) ability to leverage underutilized or low-cost space, and v) dispersion across Supervisorial Districts. As well, DEO can look to the MSLC Tax Incentives Program's applicant qualifications as a successful model to build from: "Massachusetts Life Sciences Center Tax Incentive Program expected to open in December 2023," Deloitte, 2023.
100. "Economic Development Rate Program," Southern California Edison, 2019.

2. **Providing fast-tracked support to life sciences firms navigating the County's challenging business environment.** For example, prioritize select biomanufacturing firms to work with the Life Sciences Liaisons on fast-track permitting (see Initiative 2).

3. **Launch $20M in low-interest loans for biomanufacturing firms.** This could be disbursed via a new loan fund tailored specifically for the needs of biomanufacturing firms or via replenishing an existing vehicle (e.g., Manufacturing Revolving Loan Fund) with funding and updated eligibility requirements. This is a catalytic mechanism to directly provide funds to biomanufacturers in need of support scaling to pilot-stage. To cover a useful portion of costly scale-up space, which can range from $5-50M,[101] the fund should allocate $20M over the first two years, with potential to add $30M over years 3-5 to meet demand. Qualifying criteria should be broad and accommodating of life sciences applicants, with features that meet the unique needs of life sciences firms at this distinct growth stage. For example, loan distribution limits should be $5M[102] and job creation requirements should be one job per $150,000 in loan assistance.

ADVANTAGES OF THIS ACTION INCLUDE:

Quick wins to support firms: Helping firms utilize existing subsidies and leveraging the DEO Life Sciences Liaison to support high-potential firms are relatively "low lift" for DEO and can happen in the short-term, thus providing quick wins in terms of firm growth and job creation.

Inclusive job creation: As discussed, biomanufacturing presents the most promising opportunity for long-term, inclusive, middle-skill job growth in LA County. Tying incentives to inclusive hiring criteria would ensure that funded firms employ a diverse local workforce. Additional selection considerations include i) ensuring that a representative mix of founders receives funding, ii) requiring firms to build new facilities in locations that meet both competitiveness and geographic equity criteria, and iii) requiring that jobs created pay above LA County's median wage of $68,000.

ACTION 3B: Longer term: Add new incentives and expand offerings to up to 10 firms (including larger, non-LA County based firms)

Following the initial phase of standing up and testing the incentives program, DEO and its partners can ramp up LA County's ability to attract larger firms from elsewhere by expanding the set of incentives in their toolkit. Incentives such as EIFDs, repurposing County-owned land, and full sales tax exemptions provide promising opportunities for job growth in LA County when accounting for internal budget considerations and the needs of larger-scale biomanufacturing firms. From this larger selection of incentives, firms should be eligible for up to $15,000 in incentives per job created — in line with similar successful programs in Massachusetts and North Carolina — as well as the supports indicated in Action 3A.[103] Expanding offers to 10 firms per year will still allow DEO to ensure incentive packages are tailored to each firm's unique needs.

101. [a] "Life Sciences Fit Out Costs Guide," Cushman & Wakefield, 2024. [b] "Breaking the Cost Barrier on Biomanufacturing," BCG, 2024.
102. Note: The average loan value is expected to be $1-3M, so the $20M will support an estimated 7-20 firms.
103. [a] "North Carolina Economic Development Incentives," BLS & Co, 2023. [b] "Tax Incentive," MLSC, 2024.

Incentives can include:

1. **Enhanced Infrastructure Financing Districts (EIFDs):** EIFDs are districts in which funds raised through tax increment financing can be re-invested in the area to finance public projects.[104] Peer regions like the San Francisco Bay Area have used similar tax increment financing (EIFDs) to establish life sciences hubs.[105] DEO, alongside the Public Financing Authority and LA County Public Works (DPW), should form EIFDs in areas with high biomanufacturing potential, considering both industry needs — proximity to research institutions and modal networks to move goods — and workforce needs — proximity to public transit and talent pools that do not currently have nearby quality job opportunities. Life sciences firms can leverage EIFDs to fund brownfield and opportunity site remediation, industrial structures, and utility upgrades.[106] Location selection should account for broader economic and the goal of benefiting historically disinvested communities, taking an equity lens to ensure community compatibility, prevent displacement, and guard against gentrification, as applicable.[107]

2. **Repurpose County-owned land:** The County can convert vacant land into practical life sciences uses and offset higher costs in LA County by offering more "shovel ready" sites to anchor life sciences firms at below-market rates. DEO, in partnership with LA County DRP & CEO, can create a "land bank" by indexing all available County owned land (e.g., empty properties, vacant buildings) and designating parcels well suited for industrial and life sciences uses. Then, they can prepare top sites for productive use and rent them out under long-term, low-cost or no-cost lease agreements or sell them at discounted prices to major anchor firms. Additionally, the County can consider embedding life sciences space within current or future projects at healthcare or academic facilities, such as Charles Drew University or General Hospital. This has been successful in peer regions such as Massachusetts, where the state repurposed former military land into shovel-ready sites and, with tax incentives, attracted businesses including Bristol Meyer Squibb's biomanufacturing plant, which now employs 800 people.[108] Community buy-in and input is particularly important for this incentive, as shown by a below-market sale to a life sciences developer in Seattle, which promised to contribute $78M from the sale toward affordable housing, but received push back from affordable housing advocates who were not consulted.[109]

3. **Full sales tax exemption:** California currently offers a partial sales and use tax exemption on certain manufacturing and R&D equipment, applying only to the state portion, while leaving local sales taxes intact.[110] In contrast, peer regions such as North Carolina, New York, and Massachusetts provide full exemptions, covering both state and local sales taxes, and thus reducing costs for manufacturers.[111] To compete, LA County should work with local cities to implement a full sales tax exemption for one to three years on qualifying purchases for biomanufacturers establishing or expanding operations. Eligibility should be tied to a commitment to creating quality, inclusive jobs in LA County.

104. [a] "West Carson Enhanced Infrastructure Financing District," Kosmont Companies, 2020. [b] "Financing Critical Infrastructure," Kosmont Companies, 2020.
105. Note: The City of San Francisco designated Mission Bay as a Redevelopment Area, making it eligible for Tax Increment Financing. The TIF helped finance the infrastructure for the site, laying the foundations for the life sciences hub it is today (Purpose Built, n.d.).
106. [a] "West Carson Enhanced Infrastructure Financing District," Kosmont Companies, 2020. [b] "Financing Critical Infrastructure," Kosmont Companies, 2020.
107. "SD 2 Equity Lens Based Financing District Analysis," Kosmont Companies, 2024.
108. [a] "Case Studies," Devens Community, 2025. [b] "Bristol-Myers Squibb Manufacturing Plant, Devens, Massachusetts," Pharmaceutical Technology, 2016.
109. [a] "Was the Mercer Megablock Deal a Megablunder?," The Urbanist, 2019. [b] "$143.5M 'Mercer Megablock' deal will bring science campus, affordable housing to South Lake Union," Cascade PBS, 2019.
110. [a] "California Sales and Use Tax Exemption," KBF Editorial, 2022. [b] Governor Gavin Newsom vetoed a 2022 bill that proposed full sales tax exemptions for manufacturers, siting concern for local governments bearing loss in revenue (The Business Journal, 2022).
111. [a] "Manufacturing," EDPNC, n.d. [b] "Sales Tax Exemption for Manufacturers," NYC.gov, n.d. [c] "AP 303: Manufacturing Corporations," Mass.gov, 2025. [d] "Manufacturing Company Resources," Massachusetts Technology Collaborative, n.d.

ADVANTAGES OF THIS ACTION INCLUDE:

Utilizing existing resources: These incentives will not require cash investments. Instead, they will use existing land resources and tax revenues that would not exist but for firm expansion.

Alleviate high construction costs in LA County: EIFDs are the most impactful tool that DEO can leverage to offset high construction and supportive-infrastructure costs for biomanufacturing firms and attract firms from elsewhere to unincorporated LA County.

Support equitable economic development: EIFD boundaries should be set in a way that benefits historically disinvested communities, supporting community development and creating local life sciences job opportunities.[112]

Attract larger 'anchor' firms: Offering County-owned land at subsidized prices is a strategic, cost-effective way to attract larger firms, which require substantial, often costly space and thus are drawn to regions offering competitive incentives. Anchor firm presence can further catalyze industry growth by drawing smaller firms, growing the life sciences employment base in unincorporated LA County.

Ancillary worker benefits: Beyond enabling life sciences job growth, repurposing County-owned land and other capital investments under this initiative can also generate near-term employment through brownfields remediation and construction. These activities create quality jobs, while presenting an opportunity for partnership with LA County's Building Trades Council and apprenticeship programs, advancing DEO's high-road workforce goals.

Table 4: How to action Initiative 3

	IMMEDIATE NEXT STEPS	IMPLEMENTATION TIMELINE	RESOURCING REQUIREMENTS
ACTION 3A	• **Hire BRE Lead and Capital Access team** • **Establish BRE Coalition** • **Set up $20M in low interest loans** for biomanufacturing firms, with design input from pilot-stage biomanufacturing firms • **Index existing subsidies**	• **0-6 months:** Prepare to launch incentives program through actions detailed in "immediate next steps" • **6-12 months:** Launch the incentive package and open applications. • **Year 3-5:** Potential to add $30M to the loan fund to service additional demand	• **Part of the DEO BRE Lead and Capital Access teams' time** • **$20M new funds** for the biomanufacturing loans and potential for additional $30M in Y3-5 to meet demand

112. "SD 2 Equity Lens Based Financing District Analysis," Kosmont Companies, 2024.

ACTION 3B	• **N/A**	• **6 months-Year 2:** Take steps to stand up new incentives including: » Identify areas with industrial zoning suited for biomanufacturing to create EIFDs and launch process to set up select EIFDs » Designate parcels of County-owned land suited for life sciences uses • **Year 3:** Launch new incentives and offer to 10 firms per year	• **No cash investment required for EIFDs,** repurposing County-owned land, or full sales tax exemptions

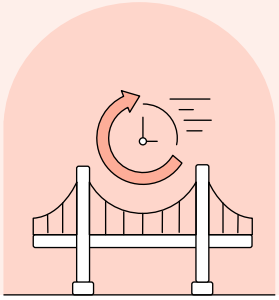
INTENDED IMPACT:

- **40 firms expand their operations in LA County over five years:**
  - » **Y1-2:** ~5 life firms expand operations in LA County per year
  - » **Y3-5:** ~10 life firms expand operations in LA County per year[113]
- **200 - 400 jobs created in total over five years, over half of which are created in underrepresented communities and over 80% of which do not require a college degree:**[114]
  - » **Y1-2:** 25-50 jobs created per year
  - » **Y3-5:** 50-100 jobs created per year

113. 10 firms per year accounts for ~5 (range of 3-10) firms served by the loan fund in addition to ~5 more served by new incentives as described in Action 3B.
114. Estimate based on Dalberg analysis of BLS data.

INITIATIVE 04.

Build a Pathway to Long-Term Relational Infrastructure Through Collaborative Working Structures



Background: Greater Los Angeles is home to 2,500 life sciences establishments, more than every other peer region. However, with an average size of 32 employees, LA's firms are sub-scale compared to those in leading clusters. Additionally, LA County has only one of the world's top 100 biotech company headquarters, compared to 18 in peer regions. This challenge is exacerbated by the dispersion of these firms across several geographic 'micro-clusters'.[115]

LA County lacks the relational infrastructure that has allowed other clusters to drive greater collaboration across their life sciences sectors and help smaller firms grow. While existing industry associations have positively contributed to the sector, their efforts are fragmented, as multiple organizations operate independently rather than as a united hub. At the same time, multiple County and City public agencies assist firms to establish and operate, creating confusion on the appropriate point-of-contact to seek support for firm's business needs. These factors create challenges at the firm level — such as making it difficult for them to navigate the ecosystem — as well as at the ecosystem level, where there is no structure in place for industry stakeholders to work together to build the cluster.

Rationale for action: Successful peer industry clusters rely on robust networks and infrastructure that facilitate ongoing collaboration between institutions. In many peer regions, government action has played a key role in convening stakeholders, addressing barriers, and creating a platform for growth.

Massachusetts provides a strong example: the Massachusetts' Life Sciences Initiative aimed to promote and expand life sciences activities in the state. It launched with $1B in funding in 2008, followed by $623 M in 2018 and $500M in 2024. Since the initiative's inception, the number of top 20 global pharmaceutical companies in Massachusetts has risen from seven to 18, and biopharmaceutical employment has grown by 114%.[116]

As a public agency, DEO is well-positioned to convene the public sector (e.g., DRP, Department of Public Works (DPW), Department of Public Health (DPH), city governments) alongside an industry partner that can represent and marshal the private sector. In the near term, DEO will be critical to operationalizing the Life Sciences Sector Strategy, engaging the Advisory Board, establishing initiative-focused working groups, and helping firms navigate the existing infrastructure. By fostering collaboration now, LA County can lay the foundation for self-sustaining, industry-led relational infrastructure in the future. Ensuring coordination across sectors will support long-term growth and align all stakeholders toward a shared strategic vision.

115. Estimate based on Dalberg analysis of BLS data.
116. [a] "Life Sciences Initiative," Mass.gov, 2010. [b] "Boston Globe EDITORIAL: Life Sciences 2.0 stokes Mass. competitiveness," MLSC, 2018. [c] "Governor Healey Signs Economic Development Bill to Strengthen Massachusetts' Global Leadership in Climatetech, Life Sciences and AI," Mass.gov, 2024. [d] "MassBio testifies in support of H.B. 4459's Life Sciences Initiative reauthorization," MassBio News, 2024.

INITIATIVE 04.

DEO should create the necessary 'backbone' collaborative relational infrastructure to break down silos and implement the Life Sciences Sector Strategy. This will include selecting a Co-lead, continuing the Advisory Board, and creating working groups (4A). Then, to unlock sector growth, DEO should empower the Life Sciences Liaison to marshal the public sector (4B) and the BRE Coalition to support key firms (4C).

ACTION 4A: Form collaborative working structures to implement the strategy

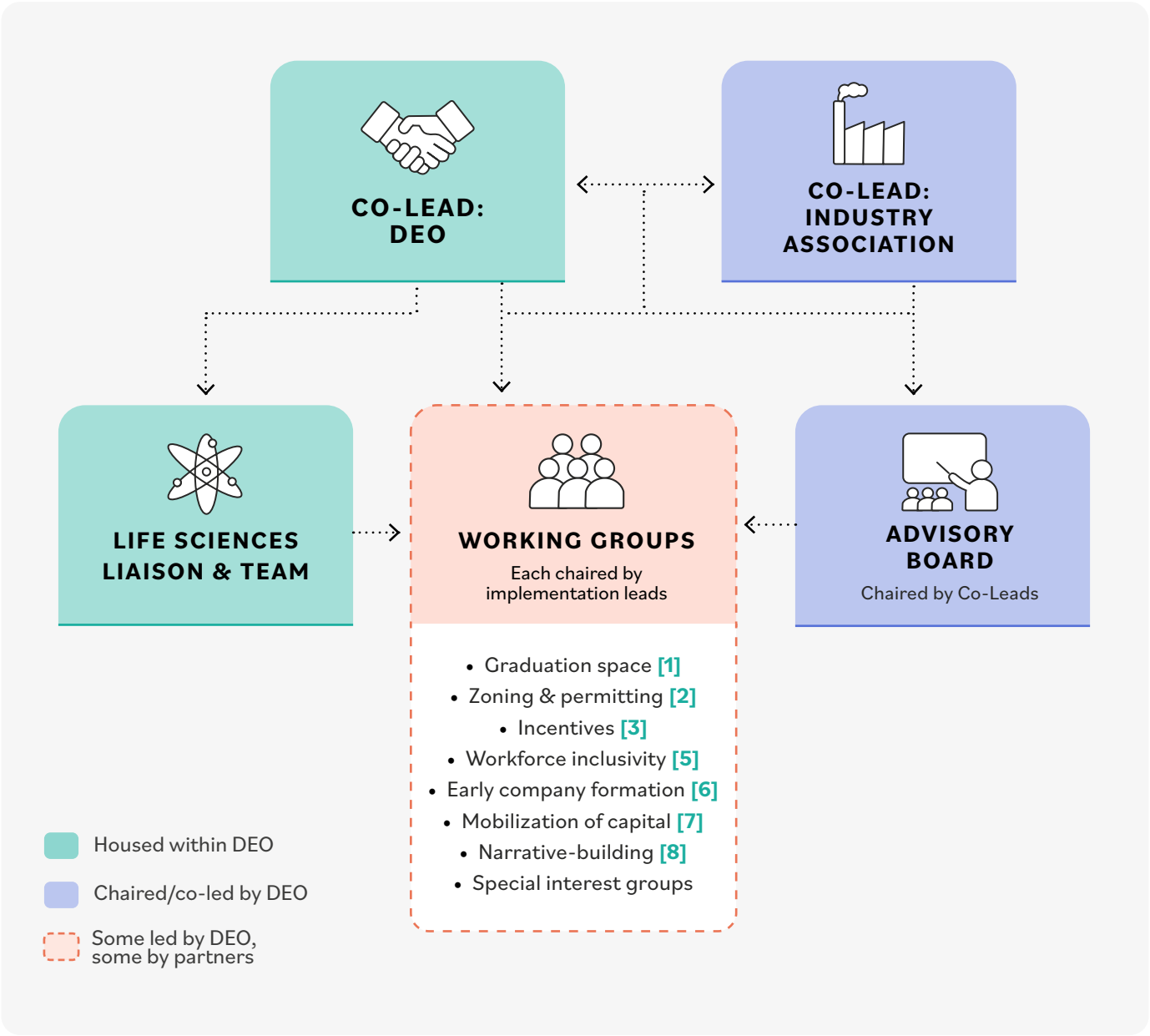
DEO should co-lead the implementation of the Life Sciences Strategy by dedicating staff, mobilizing capital resources as needed, and overseeing the relational infrastructure necessary for execution. DEO cannot act alone — successfully implementing the strategy requires deep partnership with private-sector partners. To engage critical stakeholders and foster collaboration across the ecosystem, DEO should:

1. **Set up action-oriented Working Groups.** Groups will bring together key stakeholders to support the execution of each strategic initiative. "Implementation leads" of each initiative will serve as Chairs, convening meetings to address priority questions, facilitate inter-sector collaboration, and advance implementation efforts. Working Groups should meet monthly for the first six months to provide structured input and maintain momentum. See Figure 16 below for the proposed list of Working Groups.

2. **Select a well-connected industry association to serve as Co-Lead.** The Co-lead will support strategy implementation by co-chairing the Advisory Board, recruiting and engaging members for the Working Groups, and serving as Chair for working groups of the initiatives that they are leading. Additionally, the Co-Lead will help DEO's Liaison sponsor events and participate in major firm retention, expansion, and attraction efforts.

3. **Recommit to the Advisory Board.** The Advisory Board should provide meaningful strategic input throughout implementation, guide ongoing alignment of the life sciences industry behind the strategy, serve as a powerful external voice supporting the strategy, and participate in and chair Working Groups.

Figure 16: Proposed Implementation Structure for The Strategy



ACTION 4B: Empower the 'Life Sciences Liaison' to marshal the public sector and interface regularly with the private sector

DEO is well-positioned to unify public sector efforts and serve as the main point of contact for local and incoming life sciences firms, as well as for other County departments and municipal partners. To fulfill this role, DEO has already hired a 'Life Sciences Liaison', who will:

- Serve as the primary DEO point of contact for the public and private sectors.
- Direct DEO's actions within the strategy.
- Bring together other County departments and public agencies needed to make reforms (Initiative 2).
- Lead the BRE Coalition (Initiative 3)
- Proactively engage with firms to assess their needs, help them navigate the ecosystem, advocate on their behalf, and anticipate sector trends (Initiative 3, 8).
- Proactively monitor and flag potential future opportunities, disruptions or shocks to strategic activities, including both headwinds (e.g., federal research cuts) and tailwinds (e.g., $150B pledged for U.S. reinvestment) at the local, state, and federal levels.
- Ensure Working Groups are effectively convened and advancing.
- Establish and maintain the relational infrastructure needed to execute this life sciences industry capacity-building work.

The Life Sciences Liaison and the BRE Lead (see Action 4C for details) will need support from an additional staff member to implement the activities in Action 4A. As the strategy progresses and less support is needed for implementation, this role could transition to broader business expansion and retention efforts at DEO.

PEER REGION SPOTLIGHT:
Washington State Department of Commerce's business experts

Washington's Office of Economic Development and Competitiveness (OEDC) provides dedicated business experts to guide life sciences firms through permitting, licensing, taxes, and regulatory processes. The state also employs an international trade specialist, industry sector lead, and business development manager focused solely on life sciences. These roles help recruit new companies, support expansion, and increase research funding, strengthening Washington's life sciences ecosystem.[117]

117. [a] "Get you up and running – fast!," Washington State Department of Commerce, 2024. [b] "Life Science," Washington State Department of Commerce, 2024.

ACTION 4C: Establish a Business Retention and Expansion (BRE) Lead at DEO and a broader Coalition to help attract, retain, and grow firms

BRE is a critical strategy for making LA County competitive with other regions, by ensuring that existing life sciences firms can grow, new firms can establish operations, and key investments stay in the region rather than relocating to other hubs. Effective BRE interventions require coordination across sectors, jurisdictions, and agencies. To streamline and strengthen these efforts, DEO should establish a BRE Coalition — a cross-agency team dedicated to providing proactive and responsive support to key life sciences firms, helping them stay, expand in, or choose LA County. The group will be coordinated by a 'BRE Lead' at DEO and will initially include at least five relevant agencies and organizations, including but not limited to DRP, industry associations, and economic development organizations.[118] By working together, this group will amplify the County's ability to secure and retain large projects, firms, and investment opportunities. **The BRE Coalition will:**

- Pursue large scale funding opportunities, such as federal, state, and philanthropic grant programs.
- Offer tailored supports and 'white glove' service to attract, retain, and expand strategically important life sciences firms (Initiative 3).
- Establish a dedicated website and digital toolkit for LA County's life sciences businesses.
- Mobilize additional partners as needed to support specific projects.
- Participate in the Initiative 3 Working Group.

Table 5: How to action Initiative 4

	IMMEDIATE NEXT STEPS	IMPLEMENTATION TIMELINE	RESOURCING REQUIREMENTS
ACTION 4A	• **Select an industry association** to serve as implementation Co-lead • **Engage the Advisory Board** • **Set up Working Groups,** beginning with graduation space and zoning and permitting reform	• **0-6 months:** Set up cluster infrastructure as detailed in "immediate next steps" • **6-12 months:** Kickoff remaining Working Groups	• **No funding** • **Co-Lead and Advisory Board** will operate pro bono • **Ongoing support needed** from the Life Sciences Liaison and designated time from additional staff member

118. While the BRE Coalition will not be life sciences specific, the BRE Lead should include specific life sciences collaborators to advance relevant projects.

ACTION 4B	• **Hire and onboard the Life Sciences Liaison,** and begin socializing their role	• **0 months and beyond:** Liaison engages with 20 industry actors per quarter	• **Ongoing support needed** from the Life Sciences Liaison and designated time from additional staff member
ACTION 4C	• **Hire and onboard the BRE Lead** • **Conduct outreach** to public agencies and identify members to join the BRE Coalition.	• **0-6 months:** Set up the BRE Coalition • **6 months and beyond:** BRE Coalition engages with 2 firms per month and supports 5-10 projects per year (via Initiative 3)	• **The BRE Lead will be fully dedicated to Life Sciences** in the near term, then extended beyond life sciences in the long term

INTENDED IMPACT:

- **Strengthened cluster connectivity via engaging 20 life sciences industry actors and firms** in LA County (or interested in the region) each quarter to keep a pulse on the sector and growth trends (led by the DEO Life Sciences Liaison).
- **Produce an annual brief** of key needs and trends in Q3 (every year, led by Life Sciences Liaison).
- **Directly support at least 5-10 projects a year** via the BRE Coalition (as part of Initiative 3).
- **Proactively engage at least 25 additional life sciences firms a year** (at least 2x a month) via the BRE Coalition to discuss how the coalition can help businesses make "Pro LA County" retention and expansion decisions.
- **Strategy Working Groups sustained engagement over 2 years** (at least, potentially more depending on the initiative) with cross-sector representation and meeting milestones.

INITIATIVE 05.

Better Connect Workforce Offerings to Industry and Diverse Talent Needs

Background: Past strategies, including the 2014 Battelle report, have emphasized workforce development as key to growing LA County's life sciences sector. However, after years of investing in building world-class life sciences education and workforce systems, the County now produces more life sciences talent than the local industry can absorb, leading to 75% of life sciences graduates needing to find jobs outside of the LA region.[119] Therefore, LA County's life sciences workforce sees a lack of labor demand, rather than a shortage of candidates.

The County has not yet fully leveraged its strong workforce assets to support industry and drive inclusive growth. On the industry side, stakeholders report that existing workforce resources are challenging to navigate for companies considering investing and hiring in LA County. This makes it difficult for companies to connect with talent and work with local partners to design workforce programs that meet their firms' unique needs. Difficulty navigating available life sciences training programs and job opportunities also limits access to employment pathways for underrepresented communities. This has led to persistent employment disparities in communities across LA County and existing training programs remaining underutilized.[120]

Rationale for action: LA County does not need to increase its overall supply of workforce programs, and in fact, this might exacerbate the current labor supply-demand imbalance. Instead, the County has an opportunity to bridge accessibility gaps, particularly for underrepresented communities, by strengthening pathways into life sciences careers and improving connections between industry and workforce systems. For example, although LA County has higher levels of Hispanic and Black employees than many other life sciences clusters, representation still falls short of population levels (37% of the workforce versus 56% of the population) — a gap that targeted outreach initiatives can help close.[121]

> **"I see many bioscience graduates who want to stay in LA, but they cannot because there are not enough jobs."**
>
> —INDUSTRY ASSOCIATION

At the same time, LA County's workforce is one of its strongest assets, yet firms struggle to fully access it, due to difficulties navigating the workforce ecosystem.[122] For example, a local firm shared that they faced challenges finding workers with specific skills such as cGMP training, despite the strong workforce pipeline — a disconnect that better coordination between industry and workforce programs could help address.[123] Strengthening these connections will help firms start, grow, and hire locally and make the County a more competitive hub for industry expansion. This effort would also bolster the County's existing efforts on workforce development in healthcare. The county is home to three health agencies and a public hospital, in addition to several private assets.

In other sectors, DEO has been successful in launching High Road Training Partnerships (HRTP) to address similar industry and worker challenges. HRTPs are industry-led, worker-informed partnerships that bring together employers, workers, and training providers to co-create training models that advance equity, job quality, and climate resilience. However, across the entire state of California, there is not a single life sciences focused HRTP. As part of DEO's $37M+ investment in HRTP models, there is an opportunity to both launch new HRTPs that focus on specific challenges facing employers and workers in the life sciences, as well as to ensure existing workforce programs adopt HRTP principles to better meet industry and worker needs, promote equity, and advance job quality.

119. Dalberg analysis of award/degree data collected from the IPEDS by NCES.
120. Biomanufacturing focus group, 2024.
121. [a] Dalberg analysis of BLS data. [b] "2020 Census Demographic and Housing Characteristics File," U.S. Census, 2020.
122. Stakeholder interviews, 2024.
123. Biomanufacturing focus group, 2024.

INITIATIVE 05.

In the near-term, the County should prioritize 'connecting the dots' between industry demand and anticipated job creation, training programs, and diverse talent. This action will include (A) improved connections between industry and existing workforce, education, and talent development resources, and (B) expanded pathways for underrepresented talent to enter the life sciences. DEO's role will be to lead in partnership development between industry, community-based organizations, and other workforce development experts, such as workforce development board executive directors and community college workforce deans, as detailed in actions 5A and 5B below. DEO recognizes the dual customers of the workforce system: the businesses needing skilled talent and residents seeking quality employment. A core component will be securing commitments from employers to hire from local training programs and talent pools, ensuring direct return on workforce investments.

ACTION 5A: Support companies that want to grow and hire in LA County by connecting them with the strong existing workforce system

DEO's recently established Life Sciences Liaison (see Initiative 4) is well-positioned to serve as a centralized resource connector for industry. To do so, the Life Sciences Liaison can work with BioscienceLA and other stakeholders to launch an industry facing asset map, hold regular workforce discussions with life sciences firms, identify and help fill gaps that exist for multiple firms, and promote LA County's strengths externally. These actions will make the County's exemplary life sciences education and workforce systems more accessible to firms and create a powerful incentive for companies to invest and create jobs in LA County. Steps include:

- **Centralize existing resources:** Develop an industry-facing Asset Map, a single platform that consolidates existing training programs (e.g., LA Mission College's biotechnology certificates and degrees, the BioFlex apprenticeship program, Glendale Community College's associates degree), funding sources (e.g., Work Opportunity Tax Credit, on-the-job training, VC and angel investors, private grants), upcoming events (e.g., job fairs) and guides (e.g., a guide to partnering with community college biomanufacturing certificate programs to ensure specific skillsets are included), and organizes them by firm-stage (e.g., start-ups looking for first hires versus mature companies looking to hire dozens of manufacturing technicians) to maximize usability. This digital asset map will be a key tool for employers and should integrate with the virtual America's Job Center of California (AJCC) DEO is developing, the state's Eligible Training Provider List, and the new life science focused Center of Excellence within DEO's newly modernized AJCC system to facilitate seamless connections to talent, including from vulnerable populations.
- **Engage firms to understand industry workforce needs:** Hold proactive discussions with new and existing firms to assess current and future workforce needs and connect firms with relevant training programs and resources. Explore with industry partners the feasibility and benefits of adoping enhanced local and targeted hiring goals to maximize community impact.
- **Identify workforce gaps:** Pinpoint workforce gaps that are limiting growth for multiple firms and collaborate with partners to create new curricula or programs to address these needs.
- **Launch Life Sciences High Road Training Partnerships (HRTP):** DEO will champion expansion of HRTPs, aiming for life sciences training programs to increasingly adopt HRTP principles focusing on equity, job quality, industry engagement and worker voice. DEO is investing $37+ million in HRTP models across priority sectors driving inclusive economic growth and has an opportunity to spearhead the first life sciences HRTP in the State of California. Emphasis should be added on scaling existing, successful workforce programs (e.g LA Mission College Biotechnology Certification Program) that demonstrably connect residents to quality jobs in the industry.

ACTION 5B: Increase the diversity of LA County's life sciences sector by connecting underrepresented talent with existing training and job opportunities

In tandem with Action 5A, LA County should drive inclusive growth by strengthening pathways into life sciences careers for underrepresented communities (e.g., Black and Hispanic workers, female workers, geographic areas with low life sciences employment). To achieve this, the County should conduct a detailed community needs assessment to identify communities that face gaps in access and barriers to entry into life sciences careers. As well, the assessment should identify training programs that are underutilized or lack diversity. This assessment, led by an external consultant, will provide actionable recommendations to strengthen connections between underrepresented communities and existing life sciences training programs and job opportunities. The effort should be guided by an advisory committee of relevant community-based, workforce, and industry organizations such as CBOs, industry associations, community colleges, LAEDC, workforce development boards, UNITE-LA, and life sciences firm representatives.

Based on the study's findings and recommendations, DEO should identify opportunities to bridge the gap between underutilized workforce programs and communities with limited access to life sciences careers. Potential recommendations (to be validated by the community needs assessment) include:

- **Launch a volunteer community ambassador program:** Partner with CBOs to recruit and train community-embedded ambassadors from community colleges, career centers, and other local networks in underrepresented communities. These ambassadors, which may include staff from the new life science focused Center of Excellence being established as part of DEO's modernized AJCC system, will serve as trusted messengers, sharing information about life sciences careers and training opportunities to help connect diverse talent with existing, local workforce programs.
- **Tailor workforce programs to both industry *and* community needs:** If the assessment identifies specific communities that lack life sciences pathways due to unmet barriers, DEO can provide planning grants to Community Based Organizations (CBO) to develop targeted programs that are accessible, affordable, and designed to attract and support these communities.[124]
- **Centralize existing resources:** Develop a workforce landing page that contains all worker-facing life sciences resources (e.g., catalogs of life sciences training programs, links to relevant existing job boards, apprenticeship, and internship programs), designed specifically for communities with low participation in the life sciences industry to improve visibility and access.
- **Cradle to Career Pipeline:** DEO should also seek to build a "cradle to career" pipeline by exploring partnerships with K-12 school districts and the Los Angeles County Office of Education (LACOE) to build early awareness and foundational skills. These connections can be strengthened with existing programs like Youth@Work to provide early paid work experiences for young residents.

124. E.g., (pre)apprenticeship programs in underserved communities that build on the successful BioFlex model.

PEER REGION SPOTLIGHT:
Accelerate NC's Manufacturing Ambassador Program

NC Biotech partnered with CBOs to recruit and train trusted local ambassadors to increase awareness of and opportunities in life sciences manufacturing in underrepresented communities. In two years, the program trained 150+ ambassadors across 31 counties, equipping them to share information about life sciences manufacturing with at least 10 individuals each. The program has surpassed its goal, successfully sharing training and job opportunities with nearly 6,000 community members across 59 communities, expanding access to life sciences careers, and strengthening the local talent pipeline.[125]

Table 6: How to action Initiative 5

	IMMEDIATE NEXT STEPS	IMPLEMENTATION TIMELINE	RESOURCING REQUIREMENTS
ACTION 5A	• **Socialize the Life Sciences Liaison's "connector" role** • **Begin holding meetings** with key firms • **Gather inputs** needed for the asset map • **Convene a working group** of key stakeholders (see Initiative 4)	• **0-6 months:** Begin Life Sciences Liaison activities as detailed in "immediate next steps". • **6 — 12 months:** Develop the asset map. • **Year 1-2:** Launch HRTP by Year 2 or sooner if funding secured	• **$2M in funding** to launch new life sciences HRTPs • **~$25,000 one-time funds** to develop the asset map. • **Actions fall under the Life Sciences Liaison team's mandate.**

125. [a] "Accelerating equitable growth in North Carolina's life sciences cluster," Brookings, 2024. [b] "Request For Proposal," NCBiotechhttps://www.ncbiotech.org/sites/default/files/inline-files/RFP_BBB Ambassador Program Support_2023.pdf, 2023. [c] "Accelerate NC – Life Sciences Manufacturing," EDA, 2024.

ACTION 5B	• **Convene a working group of key stakeholders** (see Initiative 4) that can support the development of the community needs assessment and advise on subsequent actions • **Hire contractors** to lead the community needs assessment	• **Year 2:** Conduct community mapping assessment • **Year 3:** Launch volunteer community ambassador program, workforce landing page, and other targeted programs (as validated by the community needs assessment)	• **~$375,000 one-time funds** for community needs assessment, community ambassador program, and workforce landing page

INTENDED IMPACT:

- **Increased awareness, satisfaction, and usage of workforce resources** for 5-10 life sciences firms per year through County resources, including consultation with DEO's Life Sciences Liaison and the industry asset map.
- **Increased awareness and uptake of training and employment opportunities** in currently underrepresented communities by Y3 (relative to baseline established in community needs assessment).
- **Launch of volunteer community ambassador program** to provide specific support as identified in community needs assessment; in Y3-5, 50 ambassadors are trained who reach a total of at least 2,000 individuals.

The sequencing and timing of these initiatives will be critical to their overall success. The high-level timeline that follows provides a strategic view of priorities, highlighting which actions should be tackled immediately and which may be phased in over time. This visual serves as a guide to inform implementation planning and ensure that momentum is sustained across key milestones.

Actions to Achieve the Strategic Vision – Where Industry Must Lead

DEO is best positioned to support Initiatives 1-5 of this strategy, as noted above, while other industry actors are best suited to lead certain initiatives given their expertise, influence, and resources to drive impact. Specifically, three initiatives were identified for industry leadership: (i) creating an innovation ecosystem that accelerates company formation, (ii) expanding financial capital access for life sciences firms, and (iii) amplifying LA County's value proposition as a life sciences cluster in a unified narrative campaign. These initiatives provide potential solutions for industry leaders to further explore, while allowing them to shape implementation based on their expertise and strategic priorities.

06. **IMPROVE EASE OF EARLY COMPANY FORMATION IN LIFE SCIENCES, ESPECIALLY IN KEY GROWTH AREAS**

07. **MOBILIZE PUBLIC & PRIVATE SOURCES OF EARLY-TO-SEED-STAGE CAPITAL FOR LA COUNTY LIFE SCIENCES FIRMS & FOUNDERS**

08. **UNITE AROUND A COMPELLING OPPORTUNITY NARRATIVE FOR LA COUNTY'S LIFE SCIENCES CLUSTER, AND BROADCAST IT TO THE WORLD**

INITIATIVE 06.

Improve Ease of Early Company Formation in Life Sciences, Especially in Key Growth Areas

Background: LA County is home to top-tier research institutions yet lags behind peer regions in translating its intellectual capital into successful, locally based startups and growth companies. Despite producing high volumes of patents and publications — and a historically strong technology transfer process — startup formation and out-licensing activity have declined over the past decade. Many founders struggle to navigate the early business landscape, secure incubator space, access mentorship programs, and feel integrated with the broader industry.

> **The technology transfer process is a barrier for companies who want to stay in LA. We need to work with universities to fix this."**
>
> —ECONOMIC DEVELOPMENT ORGANIZATION

Though some attention to this is warranted, experience demonstrates that it is challenging to attract large anchor firms to relocate to a new region. Instead, the County's future success depends on increasing the number of startups that form and move through the development pipeline, ultimately creating the next generation of high-growth firms that attract investment and generate quality jobs.

Rationale for action: Fueling startup formation is essential for transforming research into economic impact. Peer regions have invested in streamlining technology transfer, expanding incubator capacity, and providing targeted support to new ventures. Without similar action, LA risks losing promising companies to better-resourced ecosystems. Beyond simply increasing startup volume, LA County has an opportunity to intentionally target priority growth areas across the life sciences — particularly companies that focus on convergence with technology & AI and medical devices — to demonstrate its ability to meet both current and future industry demands.

POTENTIAL SOLUTIONS: To strengthen LA County as a hub for life sciences startups and growth companies, industry stakeholders should consider the following approaches:

A. Expand wraparound support for researchers and early-stage founders to help convert LA County's research into more job-creating companies. To achieve this, stakeholders should:

- Centralize impartial guidance on technology transfer and IP licensing.
- Expand entrepreneurial training such as business plan development and VC pitches/ funding preparations.
- Facilitate networking with industry and connections with experienced talent.
- Formalize mentorship programs.

PEER REGION SPOTLIGHT:
New York

In New York, university technology transfer offices meet monthly to build relationships, share tips and information on funding/VC trends, and are deeply connected to national networks via AUTM.[126]

B. Ensure LA County's incubation space keeps pace with rising demand, particularly in high growth areas like AI convergence. To achieve this, stakeholders should:

- Continue collaboration among research institutions, developers, funders, and entrepreneurs to expand incubation capacity in line with evolving market demand.
- Ensure AI convergence startups have access to specialized incubator facilities they may need, such as access to significant computing power and tailored technical support.[127]

PEER REGION SPOTLIGHT:
The California Institute for Quantitative Biosciences (QB3)

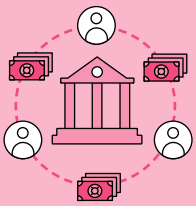
The QB3 is a University of California physical innovation hub for life sciences and climate. It has built supportive commercialization pathways by integrating research, startups, physical space, and entrepreneur support services to de-risk early-stage companies.[128]

Industry leadership: This initiative should be led by industry actors that are directly immersed in early company formation. This includes universities and their technology transfer offices, incubators and accelerators, capital providers, corporate partners, etc. DEO's role will be to support the initiative, alongside other working group members who might include research institutions, real estate developers, funders, and entrepreneur networks.

126. Stakeholder interview with New York technology transfer lead, 2024.
127. Stakeholder interviews, 2024.
128. [a] "The Biotech+ Idea Factory," QB3, 2024.

INITIATIVE 07.

Mobilize Public & Private Sources of Early-to-Seed-Stage Capital for LA County Life Sciences Firms & Founders



Background: A thriving life sciences startup ecosystem in LA County depends on a strong funding pipeline that supports firms from inception to scale. While LA County excels in securing grant and seed-stage funding, it falls behind peer regions in early-to-seed stage venture investment. Many promising startups face a funding gap — commonly known as the "valley of death" — where a lack of capital prevents them from progressing past early stages of growth. As a result, many high-potential companies are forced to leave LA County to secure funding in capital-rich markets.

Rationale for action: Without access to diverse capital from both private and public sources, local firms will continue to struggle to scale and attract national investment interest. The LA County ecosystem must ensure that local startups have access to the capital they need to grow and remain in the region.[129]

> **LA County's venture capital community is less competitive for bioscience funding compared to other regions. LA County should also broaden its perspective to look at angel investors, micro-VCs, etc."**
>
> — VC FIRM

POTENTIAL SOLUTIONS: To better mobilize public and private capital for its life sciences firms, LA County actors can support two promising options:

A. Increase investor engagement with existing companies, innovations, and incubators in Greater LA. Strengthening LA County's investment pipeline requires elevating local companies and fostering stronger connections between early-stage companies and investors. To achieve this, stakeholders should:

- Create new partnerships with investor associations and venture networks to increase visibility of local companies. (e.g., New York Stock Exchange which focuses on supporting early-stage companies).
- Facilitate direct interactions between VCs and early-stage companies through pitch competitions, VC roadshows, incubator co-location spaces, etc.
- Partner with industry associations to host innovation awards and showcase LA-based firms at major conferences such as BIO and JPMorgan Chase's annual Healthcare Conference.

129. In addition to attracting additional sources of capital, a parallel approach to alleviating this constraint may be strengthening the quality of LA County-based life sciences companies seeking investment, such as by supporting the County's assets in human and intellectual capital and improving the commercialization process (see Initiative 6).

B. Increase awareness and access to non-dilutive public funding opportunities.
To do so, stakeholders should:

- Increase awareness of programs including Small Business Innovation Research (SBIR), Small Business Technology Transfer (STTR), ensuring startups understand how to secure public funding.
- Connect with the Advanced Research Projects Agency for Health (ARPA-H) program and funding opportunities, as well as other programs like the Biomedical Advanced Research and Development authority (BARDA), and Congressionally Directed Medical Research Programs (CDMRP).

C. Use policy and financial mechanisms to mobilize private investment.
To do so, stakeholders should:

- Consider establishing a policy or resolution that directs LA County Employees Retirement Association (LACERA) funds toward VCs that invest solely in LA County's early and growth stage firms across their startup journeys.
- Use property tax incentives to encourage institutional investors and high-net-worth individuals to invest in funds that prioritize LA-based life sciences startups.

PEER REGION SPOTLIGHT:
Armata Pharmaceuticals

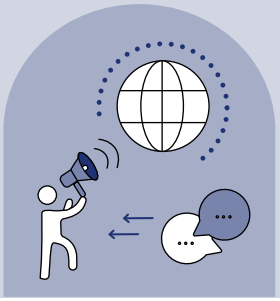
Armata Pharmaceuticals, an LA-based firm, secured $15M in 2020 from the U.S. Department of Defense, and an additional $5.25M in 2024 to fund clinical development — demonstrating the value of leveraging non-dilutive funding sources.[130]

Industry leadership: This initiative should be led by a local life sciences industry association or an actor that works across the ecosystem. DEO's role will be to support the initiative, alongside working group members, who might include early-stage companies, incubators, and representatives of the investor community (VCs, family offices).

130. "Armata Pharmaceuticals Secures $5.25M Non-Dilutive Grant," Synapse, 2024.

INITIATIVE 08.

Unite Around a Compelling Opportunity Narrative for LA County's Life Sciences Cluster, and Broadcast it to The World



Background: Despite its strengths, LA County has struggled to gain widespread recognition as a leading life sciences destination. Unlike leading peer regions, where coordinated branding has cemented their global reputations, LA County lacks a strategic narrative that successfully communicates its strengths to investors, firms, and policymakers. As a result, the region remains underrecognized despite its assets.

Beyond external visibility, fragmentation and limited cross-sector collaboration within LA County's life sciences sector weaken collective momentum. For example, other leading hubs have stakeholders working in collaboration to advance shared goals, while LA's ecosystem operates in silos, making it difficult to build industry-wide initiatives that reinforce its competitive advantages. Strengthening the County's collaborative infrastructure will be key to crafting a unified narrative that resonates internally and externally.

Rationale for action: A strong, unified narrative is critical for cementing LA County's position as a premier life sciences destination. Peer regions have shaped their identities through deliberate narrative exercises, ensuring that investors, policymakers, and corporate decision-makers recognize their regions as life sciences powerhouses. Without a focused effort to elevate LA County's reputation, the region will struggle to compete for talent, investment, and industry partnership. A well-articulated brand identity is necessary to help LA County attract investment, talent, and industry partnerships while fostering pride and collaboration within the local ecosystem.

Existing ecosystem members have already taken critical steps to lay the groundwork for a shared vision of LA County's life sciences future. To maximize impact, these efforts must be unified and amplified under coordinated leadership and aligned messaging.

> **Companies don't always know where or who to go to. Even if there are great things happening, they aren't useful if people don't know where to look. We need to clarify where people can get support."**
>
> — INDUSTRY ASSOCIATION

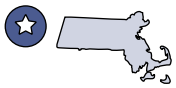
POTENTIAL SOLUTIONS: To unite around and broadcast a stronger opportunity narrative for the cluster, industry stakeholders can explore two potential solutions:

A. Build on the branding work initiated by ecosystem members to create a unified global marketing campaign. To achieve this, stakeholders should:

- Engage a working group to design the campaign, including members from local advertising and PR firms, industry, incubators, funders, etc.
- Develop key campaign messages that define LA County's core value proposition, highlighting world-class research capabilities and intellectual property, a diverse labor pool, a uniquely diverse population for clinical trials, a prolific number of healthcare delivery organizations, global connectivity, and advanced manufacturing base — alongside the benefits of a Southern California lifestyle.
- Develop targeted sub-campaigns for specific audiences, such as federal agencies (e.g., NIH, FDA), foreign direct investors, and Pacific Rim markets.
- Roll out the campaign with support of ambassadors at digital and in-person events, as well as through intentional showcases of County assets at milestone events that draw attention and investment, such as the 2026 FIFA World Cup and 2028 Olympics.

B. Deepen cluster connectivity and internal messaging across Greater LA. Strong internal collaboration will ensure industry leaders are aligned on key priorities. To accomplish this, stakeholders should:[131]

- Identify a regional convener and industry advocate to facilitate collaboration and unify messaging.
- Expand networking and knowledge sharing platforms.
- Facilitate working groups on shared ambitions.



PEER REGION SPOTLIGHT:
The Massachusetts Life Sciences Center (MLSC)

The MLSC is a state-funded agency that leads the development and promotion of the life sciences ecosystem across Massachusetts. It plays a pivotal role in branding the region as the world's premier biotech hub by investing in infrastructure, talent development, and collaborative R&D. Through initiatives like the $1 billion Life Sciences Initiative, MLSC catalyzes public-private partnerships and supports startups, academic institutions, and major industry players alike. Its messaging emphasizes Massachusetts as a global epicenter of innovation, discovery, and commercialization in the life sciences.

Industry leadership: This initiative should be led by industry associations, given their reach and relationships across key sector stakeholders and integral role in cluster infrastructure. DEO's role will be to support the initiative alongside working group members, who might include economic development organizations, life sciences firms, and academia stakeholders.

131. See initiative 4 for more details on relational infrastructure.

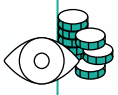
Roadmap to 2030

As global competition intensifies and technological breakthroughs accelerate, peer regions have invested billions in life sciences — fueling industry growth and creating tens of thousands of quality, inclusive jobs in established and emerging clusters. The Greater LA region now has an opportunity to increase investment and highlight its own comparative advantages. Over the past decade, job growth in the region's life sciences sector was 50% lower than that of peer regions. Without decisive action, this trend is likely to continue if not accelerate, resulting in the loss of the industry's economic, scientific, and societal benefits, including the chance to create quality jobs for underrepresented communities and bring promising health innovations to those that need it most.

This strategy builds on the region's many unique assets, while staying focused on unlocking binding constraints that have kept life sciences firms and talent from succeeding in LA County over the past decade. Built on four pillars — expanding physical space, enabling firms to start and grow locally, strengthening cluster connectivity and brand, and boosting workforce connectivity and inclusivity — this plan focuses on the most catalytic actions to build a more competitive and inclusive life sciences cluster.

LA County can become a global center for life sciences innovation, driving breakthrough discoveries while ensuring that the industry's economic benefits uplift all Angelenos. By 2030, this effort has the potential to add thousands of quality jobs regionwide. Given the strategy's focus on inclusive growth, many of these jobs offer real potential to Angelenos from underrepresented communities, offering accessible pathways into the life sciences careers. With the right investments — LA County can close the gap with its peers and chart a new trajectory.

The Life Sciences Industry Cluster Strategy provides an ambitious plan to reach this goal, but its success depends on collective action — public agencies, industry leaders, investors, research institutions, and workforce organizations — each playing their part to drive investment, shape enabling policies, and amplify LA County's strengths. Engagement from diverse stakeholders from the outset will be critical to ensure that the County's approach reflects community needs and ensures broad ownership of the strategy. Industry participation will be particularly critical to driving early company formation, mobilizing capital, and broadcasting LA life science's brand.



Achieving this vision will also require decisive investment. To truly transform the region's life sciences ecosystem, significant new capital will be needed — particularly from the private sector. Public investment, from DEO and other government agencies, can lead the way, but it must be matched and superseded by private and philanthropic partners who see the potential of this moment and are ready to help shape it. With peer regions investing up to $1B,[132] it will be critical for the cluster to receive at least an additional $100M in commitments from industry actors to unlock the next stage of growth, scale the next generation of firms, drive innovation, and retain homegrown talent. This $100M should be viewed as a starting point, additional investment will help strengthen the region's foundation, support long-term growth, and ensure the ecosystem remains vibrant and competitive in the years ahead.

132. [a] "Life Sciences Initiative," Mass.gov, 2010. [b] "LifeSci NYC," NYEDC, n.d.

Early momentum will set the tone for long-term success, signaling to firms, funders, and workers that LA County is committed to leading in the Life Sciences. The actions taken in the first year will lay the groundwork for a more connected, competitive, and inclusive ecosystem. DEO has already taken action by hiring its first ever Life Sciences Liaison to lead implementation of the strategy and support for the industry. Next, DEO will pursue additional funding opportunities to activate the strategy, begin implementation of strategies to address graduation space constraints, build out the capital access team, continue engaging the advisory board, initiate working groups to begin implementing strategic initiatives, and look to solidify collaboration with industry to co-lead. It is essential for industry stakeholders to act now, too. With coordinated investment, collective leadership, and a commitment to inclusive growth, LA County can define the future of the industry — and ensure that future benefits all who call it home.

HOW INDUSTRY STAKEHOLDERS CAN SUPPORT AND GET INVOLVED:

- **Contribute to a Working Group:** Contribute to DEO- and partner-led Working Groups focused on implementing key strategic initiatives. Joining relevant groups will ensure efforts reflect real industry and workforce needs.
- **Support expansion efforts:** Invest in graduation space construction, early-stage firms, or workforce and industry connection initiatives. Reaching LA County's goals will require both public and private investment.
- **Promote LA County's life sciences industry:** Help elevate the region's profile by promoting its strengths, sharing success stories, and advocating for its growth locally and globally.

For more information, to get involved, or to connect with DEO, please visit: opportunity.lacounty.gov/lifesciences

Acknowledgements

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- **The LAEDC Institute for Applied Economics**, Research Lead
- **David Flaks**, Expert Advisor
- **Matthew Hudes**, Expert Advisor

Dalberg

About Dalberg Advisors
Dalberg Advisors is a strategy consulting firm that works to build a more inclusive and sustainable world where all people, everywhere can reach their fullest potential. We work collaboratively across the public, private, and philanthropic sectors to fuel inclusive growth and help clients achieve their goals. For more information, visit dalberg.com

LAEDC LOS ANGELES COUNTY ECONOMIC DEVELOPMENT CORPORATION
Collaboratively Advancing Growth and Prosperity for All

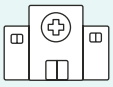
About the LAEDC Institute for Applied Economics
The LAEDC Institute for Applied Economics performs objective economic research and analysis for a wide range of clients, detailing economic impact of development, business operations, and regulation, as well as providing intelligence about specific industry clusters, labor force, and workforce development issues. The Institute's reports provide decision makers with critical information from which to make informed decisions.

Annexes

ANNEX A: DEFINING THE LIFE SCIENCES INDUSTRY

Table 7 outlines the NAICS codes that were included in the analysis of the life sciences sector for the purposes of this report.

Table 7: Life Sciences Sector Typology

AREA OF LIFE SCIENCE	DESCRIPTION	ASSOCIATED 6-DIGIT NAICS CODES
 **Drugs and Pharmaceuticals**	The drugs and pharmaceuticals subsector develops and produces biological, medicinal, and diagnostic substances. This involves R&D, and the manufacturing and commercialization activities needed to bring drugs to market. **Products include** targeted disease therapeutics, in-vitro diagnostic substances, biopharmaceuticals, drug merchant wholesalers, and vaccines.	• 325411 - Medicinal and Botanical Manufacturing • 325412 - Pharmaceutical Preparation Manufacturing • 325413 - In-Vitro Diagnostic Substance Manufacturing • 325414 - Biological Product (except Diagnostic) Manufacturing
 **Medical Devices and Equipment**	The medical devices and equipment subsector develops and manufactures biomedical instruments and other healthcare products and supplies for diagnostics, surgery, patient care, and laboratories. **Products include** surgical supplies, dental instruments, healthcare products (e.g., beds, wheelchairs), electromedical apparatus (e.g., MRI and ultrasound equipment), bioimaging equipment, and prosthetic implants	• 339112 - Surgical and Medical Instrument Manufacturing • 339113 - Surgical Appliance and Supplies Manufacturing • 339114 - Dental Equipment and Supplies Manufacturing • 339115 - Ophthalmic Goods Manufacturing • 339116 - Dental Laboratories • 334510 - Electromedical and Electrotherapeutic Apparatus Manufacturing • 334516 - Analytical Laboratory Instrument Manufacturing • 334517 - Irradiation Apparatus Manufacturing • 333314 - Optimal Instrument and Lens Manufacturing
 **Research, Testing, and Medical Laboratories**	The research, testing, and medical laboratories subsector includes research and development, life science testing laboratories, and medical laboratories. Companies involved might include research-oriented companies doing drug development and commercialization, companies involved in life science testing or service-oriented medical activities.	• 541380 - Testing Laboratories and Services • 621511 - Medical Laboratories • 541713- Research and Development in Nanotechnology • 541714 - Research and Development in Biotechnology (except Nanobiotechnology) • 541715 - Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)

	Products include biotech / life sciences research and development, laboratory support services, preclinical drug development, stem cell research, testing labs, medical labs.	
 **Agricultural Biotechnology**	The agricultural life sciences subsector concentrates on life science and technology related to agriculture production and processing, including the production and manufacturing of organic and agricultural chemicals. **Products include** ethanol and other biofuels, biopesticides and other chemical manufacturing, fertilizer manufacturing.	• 112519 - Other Aquaculture • 311221 - Wet Corn Milling and Starch Manufacturing • 325311 - Nitrogenous Fertilizer Manufacturing • 325312 - Phosphatic Fertilizer Manufacturing • 325314 - Fertilizer (Mixing Only) Manufacturing • 325320 - Pesticide and Other Agricultural Chemical Manufacturing • 325193 - Ethyl Alcohol Manufacturing • 325199 - All Other Basic Organic Chemical Manufacturing • 325180 - Other Basic Inorganic Chemical Manufacturing
 **Life Science-Related Distribution**	The life science-related distribution subsector includes firms that coordinate the delivery of life sciences-related products including drugs and pharmaceuticals, medical devices and equipment, and agricultural life sciences. **Products include** specialized technologies such as cold storage, automated drug distribution systems, and regulated product monitoring.	• 423450 - Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers • 424210 - Drugs and Druggists' Sundries Merchant Wholesalers
 **Digital Health**	The digital health subsector focuses on the development of technologies for both hospitals and consumers, including software and healthcare technology systems, that improve healthcare delivery and patient outcomes. **Products include** telemedicine platforms, wearable health devices, AI-driven diagnostic tools, e-health data analytics, and health-related mobile devices and apps.	• 513210 - Software Publishers • 524114 - Direct Health and Medical Insurance Carriers • 541512 - Computer Systems Design Services • 541513 - Computer Facilities Management Services • 532282 - Home Health Equipment Rental

ANNEX B: ADVISORY BOARD

An Advisory Board of 17+ individuals was assembled to guide this study, representing diverse perspectives: industry associations, research institutions and hospitals, life sciences firms, public sector, etc. The group's expertise was critical in shaping the final strategic plan. Esteemed members of the Advisory Board include:

- **Kelly LoBianco** (co-chair), Director, LA County DEO
- **Dan Gober** (co-chair), Executive Director, Biocom California
- **Amir Naiberg,** Associate Vice Chancellor, UCLA Technology Development Group
- **Carolyn Hull,** General Manager, City of LA Economic and Workforce Development Department
- **Dr. Chander Arora,** Biotech Program Director, Los Angeles Mission College
- **Howard Xu,** Director, LA BioSpace, California State University, Los Angeles
- **Jan Vogel,** Executive Director/CEO, South Bay Workforce Investment Board
- **Jim Lancaster,** Vice Chancellor, Los Angeles Community College District
- **Jose Torres-Ruiz,** Provost and Executive Vice President of Academic Affairs, Professor College of Science and Health, Charles Drew University
- **Marianne Gausche-Hill,** Executive Director,The Lundquist Institute
- **Michele LeSueur,** Head of Global and Portfolio Strategy, Kite Pharma
- **Mohamed Abousalem,** President, Keck Graduate Institute
- **Peter Moglia,** CEO and Chief Investment Officer, Alexandria Real Estate Equities, Inc.
- **Pierre Kyme,** Chief Business Officer, Armata Pharmaceuticals
- **Rohit Shukla,** CEO, Larta Institute
- **Stephanie Hsieh,** Interim CEO, BioscienceLA
- **Stephen Cheung,** President and CEO, Los Angeles County Economic Development Corporation
- **Steven Weinstein,** Head of Manufacturing, Takeda

ANNEX C: ANALYTICAL INPUTS

Throughout this engagement, 60+ stakeholder interviews and nine focus groups with 70+ participants were held. The Figure 17 and 18 below list the organizations included in these engagements. Figure 19 outlines the databases used in Phase 1 analyses.

Figure 17: Organizations Interviewed

1. Alexandria Real Estate
2. Allermi
3. BioLabs at the Lundquist Institute
4. Biocom
5. BioscienceLA
6. CA Governor's Office of Business and Economic Development
7. City of Los Angeles, Economic and Workforce Development Department
8. City of Pasadena
9. City of Thousand Oaks
10. GO-Biz
11. HATCHSpaces
12. Jones Lang LaSalle (JLL)
13. LA BioSpace, CSULA
14. LA Mission College
15. LAEDC
16. Lexeo Therapeutics (New York)
17. Lexitas Pharma Services (North Carolina)
18. Los Angeles County
19. Los Angeles County Regional Planning
20. Los Angeles Venture Association
21. MarsBio
22. Supervisorial District 1
23. Supervisorial District 2
24. Supervisorial District 3
25. Supervisorial District 4
26. Supervisorial District 5
27. Takeda
28. The Larta Institute
29. Trammell Crow Company

Figure 18: Focus Groups and Participating Organizations

ENTREPRENEURSHIP

- Health.LA, Larta Institute
- LA BioSpace, CSULA
- Lab Launch
- Leonhardt Ventures
- Nucleate

STARTUP FOUNDERS

- Founders of various small-medium-sized startups

AI CONVERGENCE

- AI LA
- JLabs
- Startup founders
- USC

RESEARCH / ACADEMIA

- The Lundquist Institute
- UCLA Broad Stem Cell Research Center
- UCLA Technology Development Group
- UCLA School of Medicine

PHYSICAL SPACE

- CBRE
- County DRP
- HATCHSpaces
- JLL
- Pasadena Bio

MEDICAL DEVICES

- Hardesty
- Larta Institute
- Startup founders

WORKFORCE DEVELOPMENT

- Bespoke Business Strategy
- The Keck Graduate Institute
- Los Angeles Community College District (LACCD)
- Los Angeles Economic Development Corporation (LAEDC)
- South Bay Workforce Investment Board (SBWIB)
- Southeast LA County Workforce Investment Board (SELACO WIB)
- Verdugo Workforce Development Board

BIOMANUFACTURING

- Abzena
- Biocom
- Grifols
- JLL
- Kite
- LA Mission College
- LAEDC
- Repligen
- Skylar Consulting
- Takeda

CLINICAL RESEARCH

- Cedars-Sinai
- ICON
- Keck Graduate Institute
- LAC Department of Health Services
- Larta Institute

Figure 19: Databases Consulted for The Quantitative Analyses

INDUSTRY SNAPSHOT AND SUBSECTOR ANALYSIS:

- Bureau of Labor Statistics
- Lightcast
- Quarterly Census of Employment and Wages (QCEW)
- Census
- Dun & Bradstreet
- Current Employment Statistics
- County Business Patterns
- BEA State and Local Personal Income reports
- National Industry-Occupation Employment Matrix (NIOEM)
- American Community Survey
- Railroad Retirement Board statistics

FINANCIAL CAPITAL

- Pitchbook
- NIH Funding Awards
- Crunchbase

HUMAN CAPITAL

- The Integrated Postsecondary Education Data System (IPEDS) by the National Center for Education Statistics (NCES)
- Bureau of Labor Statistics

INTELLECTUAL CAPITAL

- CWTS Leiden Ranking
- National Science Foundation, USPTO data
- United States Patent and Trademark Office, PatentsView
- AUTM STATT
- National Science Foundation, Rankings by total R&D expenditures

ANNEX C: PRIORITY GROWTH AREAS

In addition to the four growth areas prioritized, the long list of opportunity areas considered included the following promising areas that should continue to be monitored and explored further:

Clinical research includes supporting compliance with FDA mandates for diverse clinical trials to improve the effectiveness of treatments across patient groups. LA County's diverse population and strong health and research organizations provide an advantage.

Gateway to Asia would aim to attract Asian life sciences firms to choose LA County as their U.S. hub. LA County's name-recognition, reputation for research and innovation, strategic geographic location, and strong workforce are all advantages.

Outer space and life sciences convergence involves conducting life sciences research in space. LA County's commercial aerospace firms and strong research institutions position it well in this area.

Marine life sciences use ocean organisms to develop new medicines and bio-based materials. The LA region's coastline and NOAA-designated opportunity zone provide a strong base to pursue aquaculture and other ocean-based biotech innovations.

Diseases with higher prevalence in minority communities is an opportunity area that seeks to develop medical advances tailored to underrepresented communities (e.g., sickle cell anemia). LA County's diverse population makes it an ideal location to lead innovation in equitable treatment development.

Synthetic bio centers on redesigning organisms for useful purposes such as biofuels, medicine, etc. LA County's emerging cluster of synthetic bio firms, paired with funders' interest in this area, provide a launchpad to scale.

LA County's Life Sciences Industry Cluster Strategy and Action Plan

A PATH TO 10,000 NEW LIFE SCIENCES JOBS IN THE LA REGION BY 2030

Cover photo credit: Florian Lidin via unsplash.com

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department of economic opportunity
COUNTY OF LOS ANGELES

JULY 2025