

Q3 2024

# U.S. Life Science Market

## *Current Perspectives*



NEWMARK

# Market Observations

U.S. venture capital funding is on pace to surpass 2023 levels, and the number of “mega-rounds” has increased materially.

Continued momentum in FDA novel drug and biologics license approvals is signaling investment opportunities in the biotech sector.

Amid labor market headwinds, life science-related employment is flat compared to year-ago levels. With that, R&D employment is faring better.

The public markets appear to be thawing following recent interest rate cuts, with 21 biotech companies going public year-to-date.



Tenant demand is holding steady, while leasing velocity has reached a 6-quarter high across four of the top life science clusters.

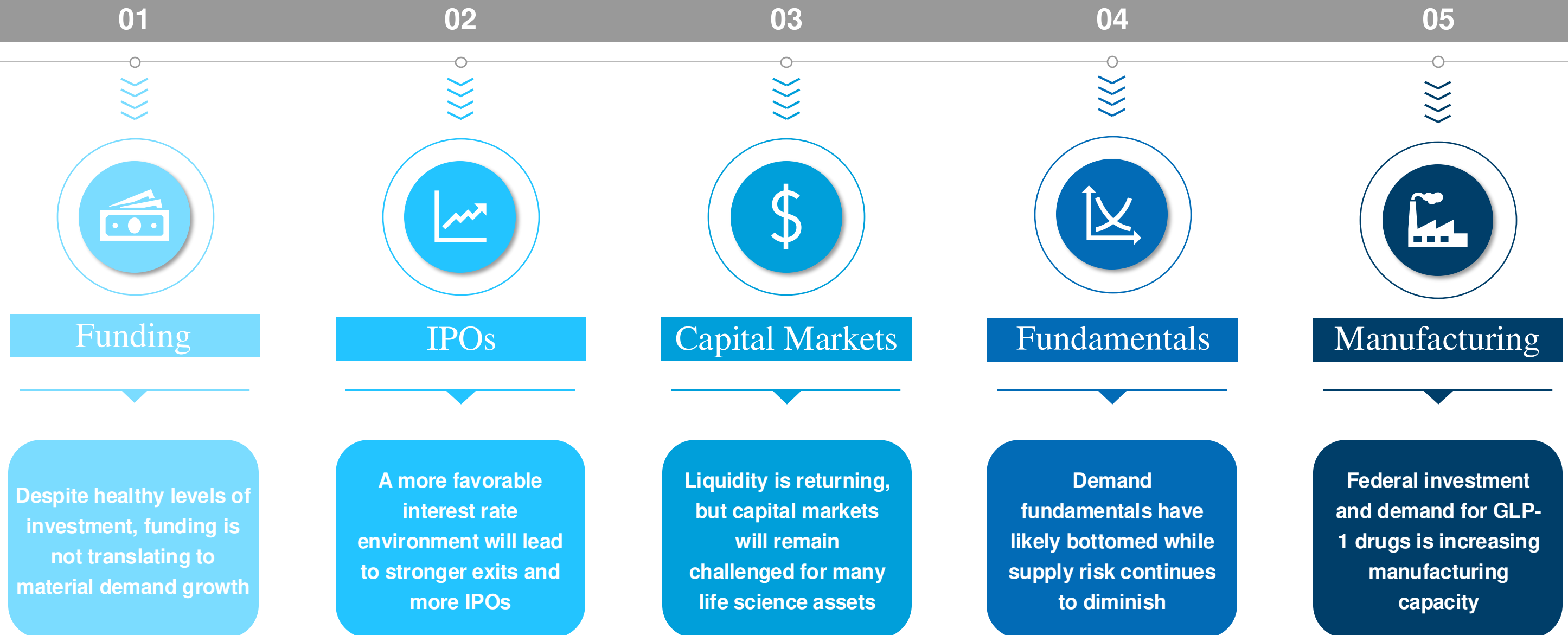
Due to the rise in spec suites, sublets and second-generation space, lab users have their pick of available built-out spaces.

Lingering vacancy in many key life science markets could take several years to work through.

Supply risk continues to abate, with select development sites and existing assets pivoting to housing and office uses.

Users considering owning their own real estate assets could drive investment sale volume in the life science sector.

# 2024 Life Science Trends to Watch



Despite ongoing challenges, the life science sector remains poised for long-term growth, driven by sustained research and development and technological advancements. These efforts focus on addressing the healthcare needs of an aging population, developing innovative drug therapies, and supporting public health initiatives.

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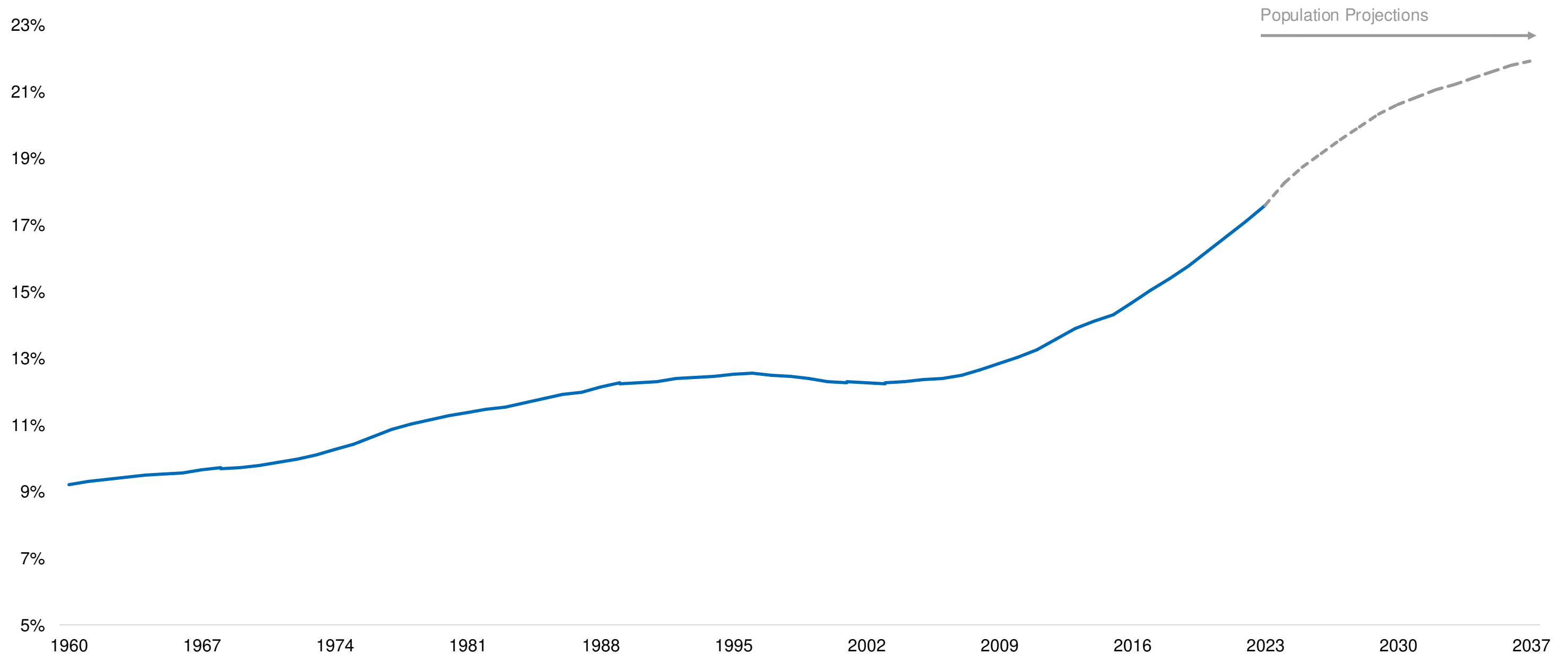
## Demand Drivers



# The Graying of America: U.S. Population is Aging

As of 2023, the percentage of U.S. residents aged 65 and older rose to 17.6%. Much of this growth can be attributed to the aging Baby Boomers, which has historically been the nation's largest generation. Population projections point to accelerated growth among this age cohort. This aging demographic will remain a driving force behind the growing emphasis on healthcare and life sciences.

## Percent of U.S. Population Aged 65 and Above



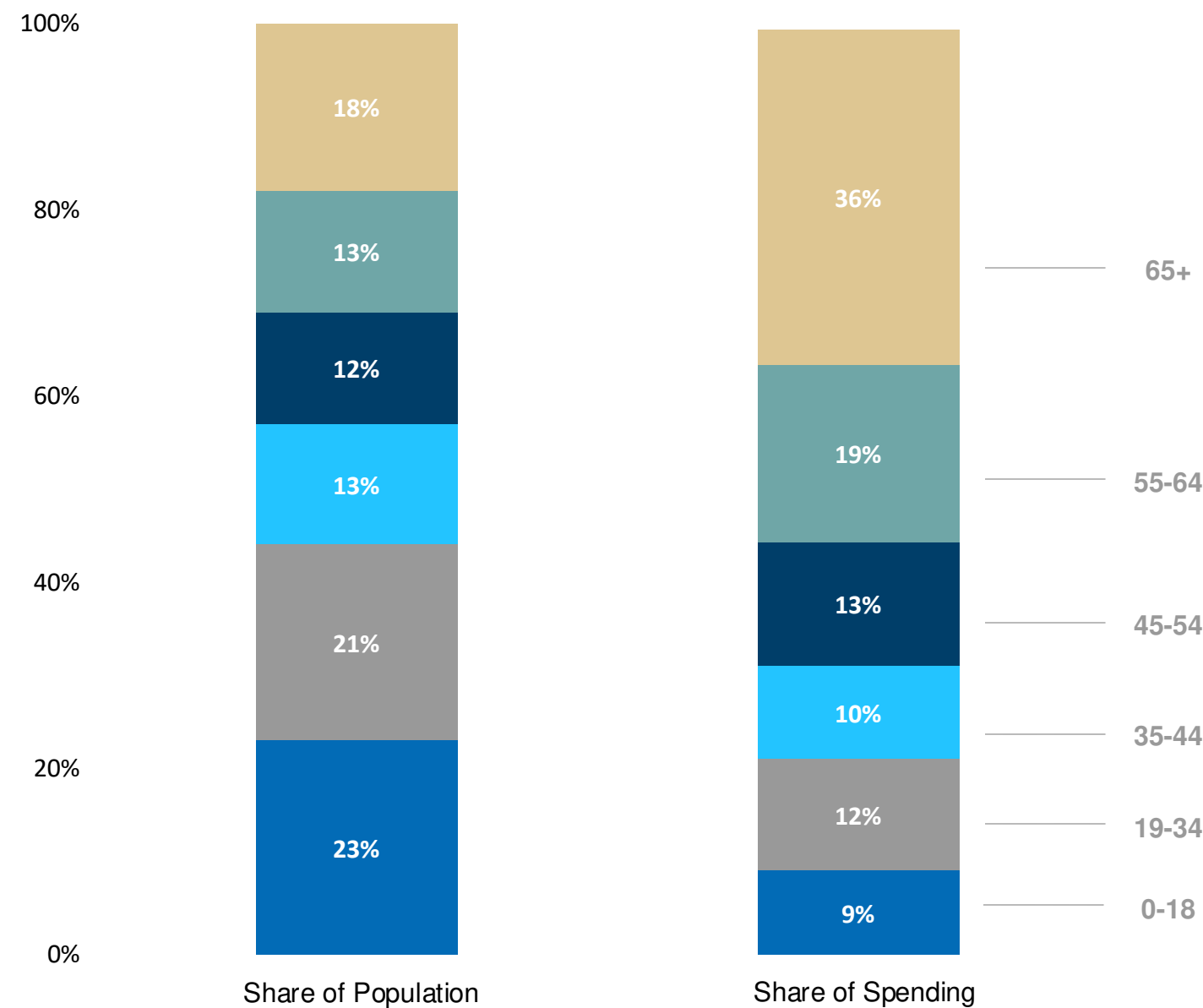
Source: The United Nations Population Division's World Population Prospects, JobsEQ, Newmark Research

As of 2023

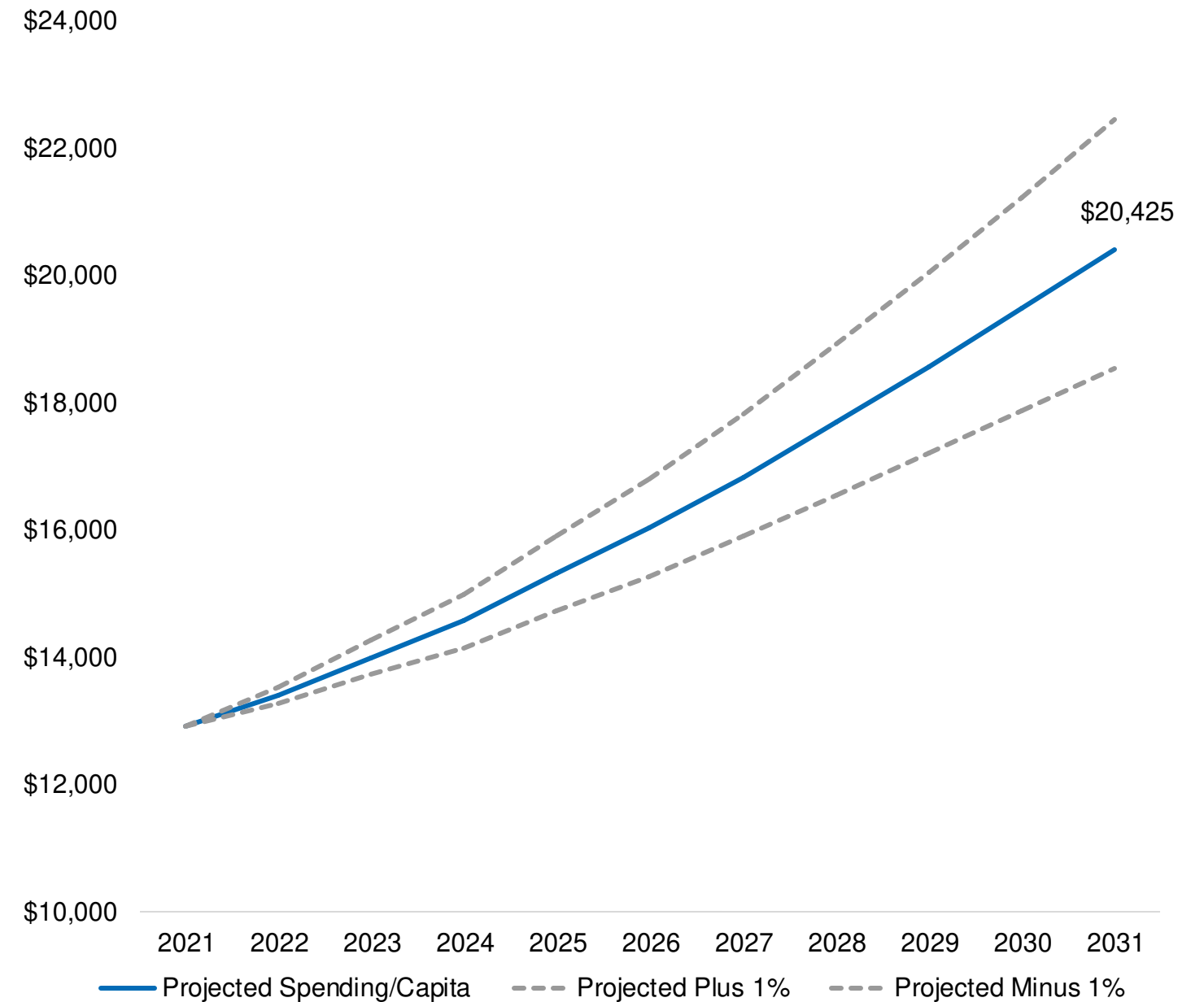
# The Price of Aging: Older Cohorts Maintain Higher Healthcare Costs

Individuals aged 65 years and older account for the greatest share of total healthcare spending. On a per-capita basis, the oldest insured age cohort spends 31.4% more than those aged 55 to 64 years old. As the U.S. population continues to age, healthcare spending will have an increasingly significant impact, likely benefiting the life science sector. Per-capita spending in the base case scenario is projected to increase by roughly 58.0% by 2031 or 4.3% per year.

Share of Total Population and Total Health Spending by Age Group, 2021



Scenarios of Projected Annual Change in U.S. Per Capita Health Spending



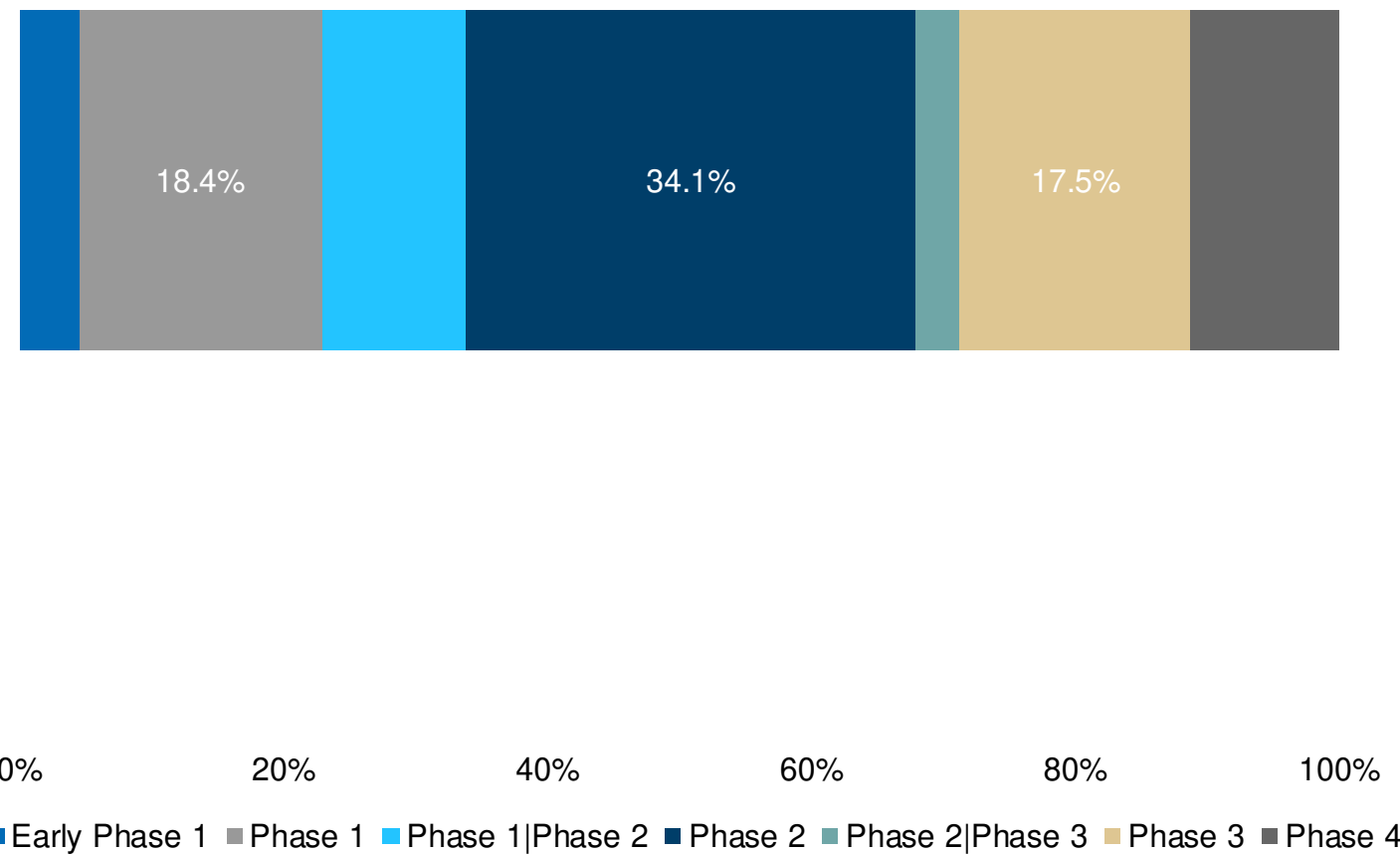
Source: KFF Analysis of Medical Expenditure Panel Survey, KFF Analysis of NHEA, National Health Spending Explorer, Newmark Research

As of 2021

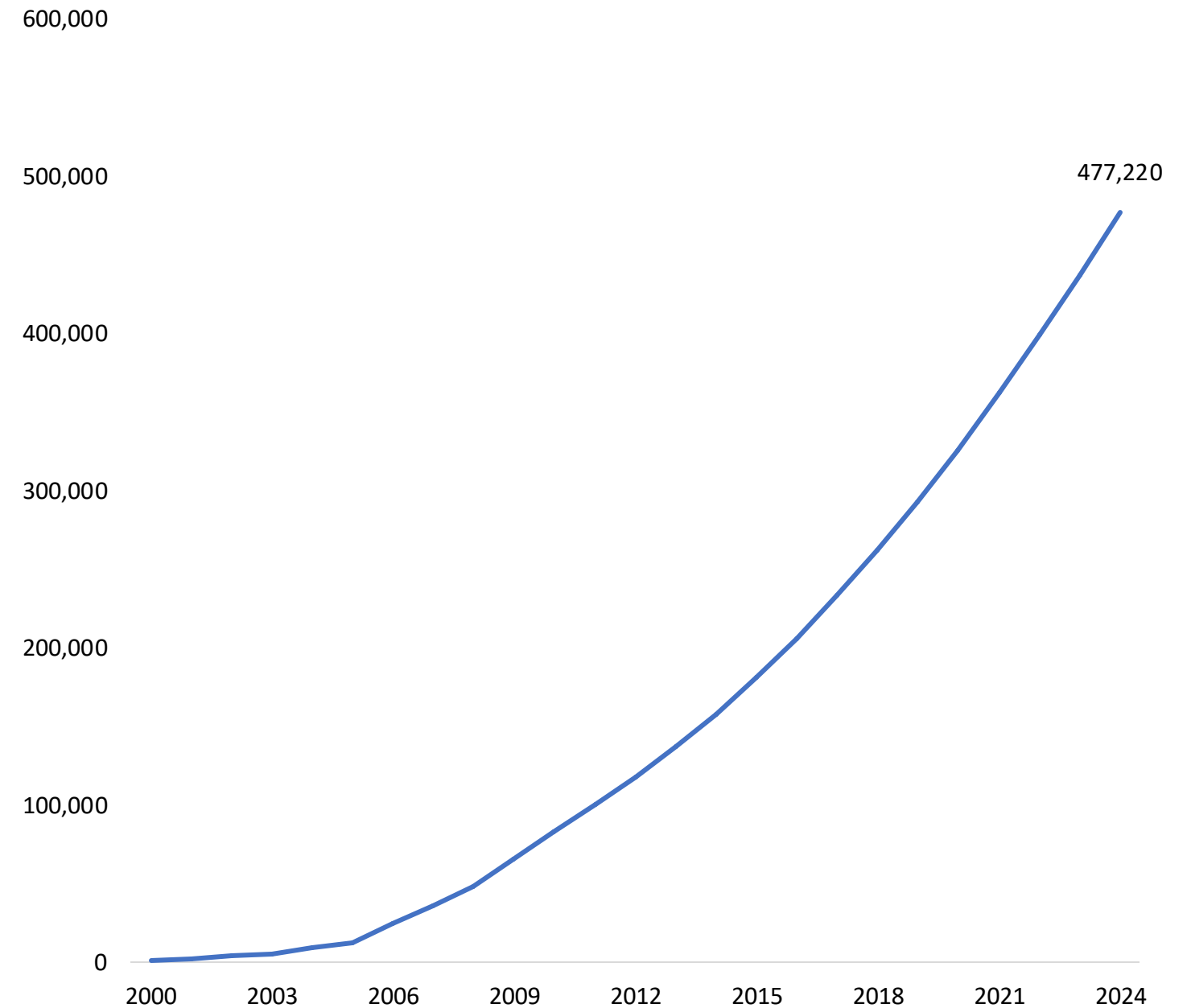
# Growth in Active Clinical Trials Supports Future Lab Demand

Over the last 20+ years, U.S. clinical trials have grown exponentially; the number of registered studies reached a record high in 2024. Life science companies with drugs in any phase of trial could experience greater space needs, but later-stage studies tend to be larger. Clinical trials receive funding from several sources, with private investment and the National Institutes of Health being the primary contributors.

Clinical Trials by Phase



Number of Registered Clinical Studies



Source: ClinicalTrials.gov, Newmark Research

Note: Includes interventional clinical trials with a recruitment status of not yet recruiting, recruiting, enrolling by invitation, and active (not recruiting).

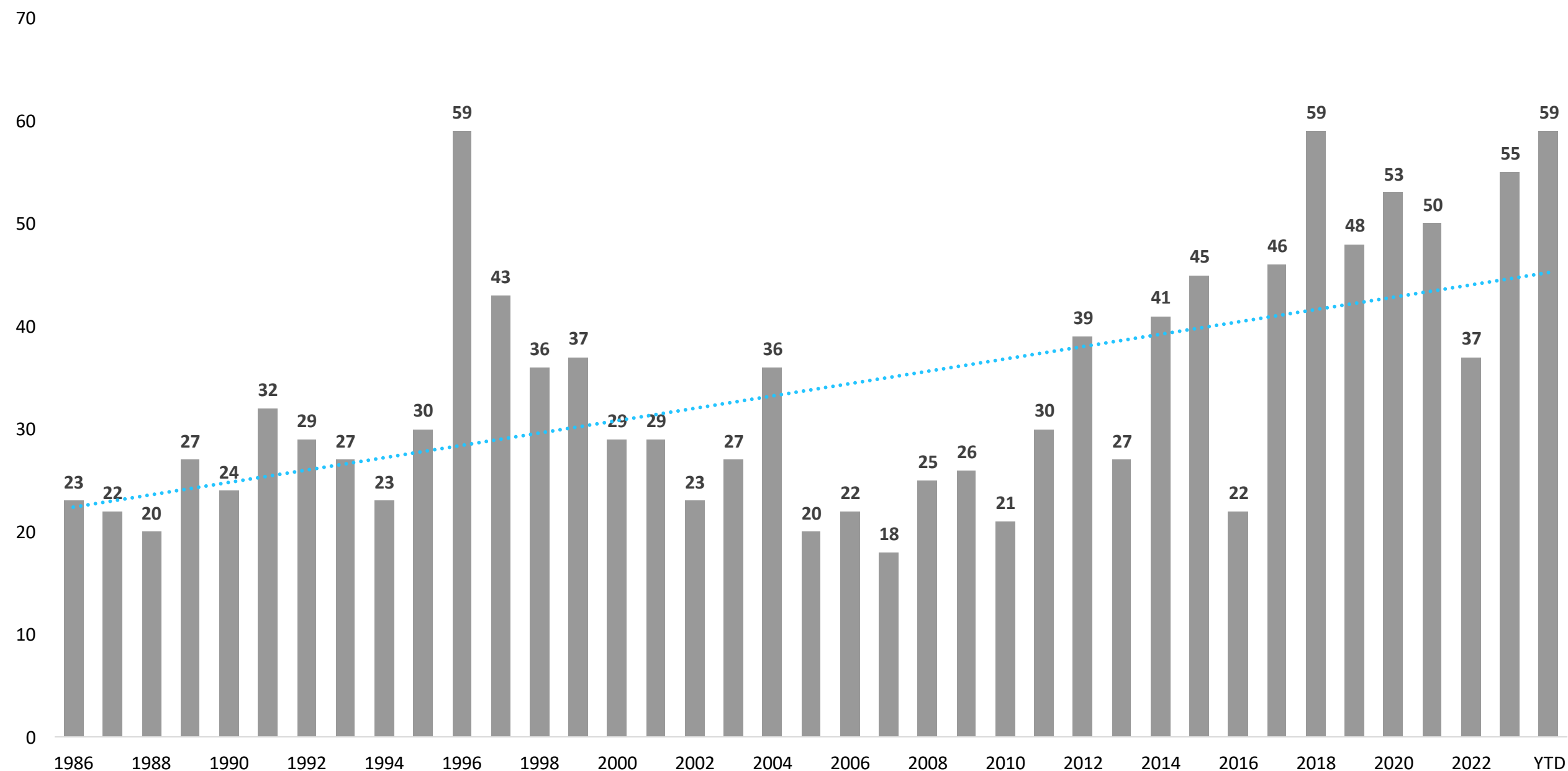
As of Q3 2024



# FDA Approvals Signal Biotech Investment Opportunities

Following a near-record year, the FDA approved 59 drugs through the third quarter of 2024. New drugs and treatments progressing through the pipeline can signify a turning point for biotech companies, with many often needing more research, development and manufacturing space. According to industry sources, an estimated 12% to 14% of drugs entering clinical trials ultimately receive FDA approvals.

## FDA Annual New Drug and Biologics License Approvals



Source: Food & Drug Administration, PharmaShots, MIT, PhRMA, Newmark Research

As of Q3 2024

# Pharmaceutical Manufacturing Production Accelerated in Third-Quarter

The industrial production of pharmaceuticals and medicine, which measures the real output of U.S.-based establishments, reached a cyclical high at the end of third quarter of 2024. Recent federal investments in this space and the growing demand for GLP-1 drugs is driving increased manufacturing capacity. In response, several drug makers are looking to expand operations domestically and overseas.

## Industrial Production: Manufacturing: Non-Durable Goods: Pharmaceutical and Medicine



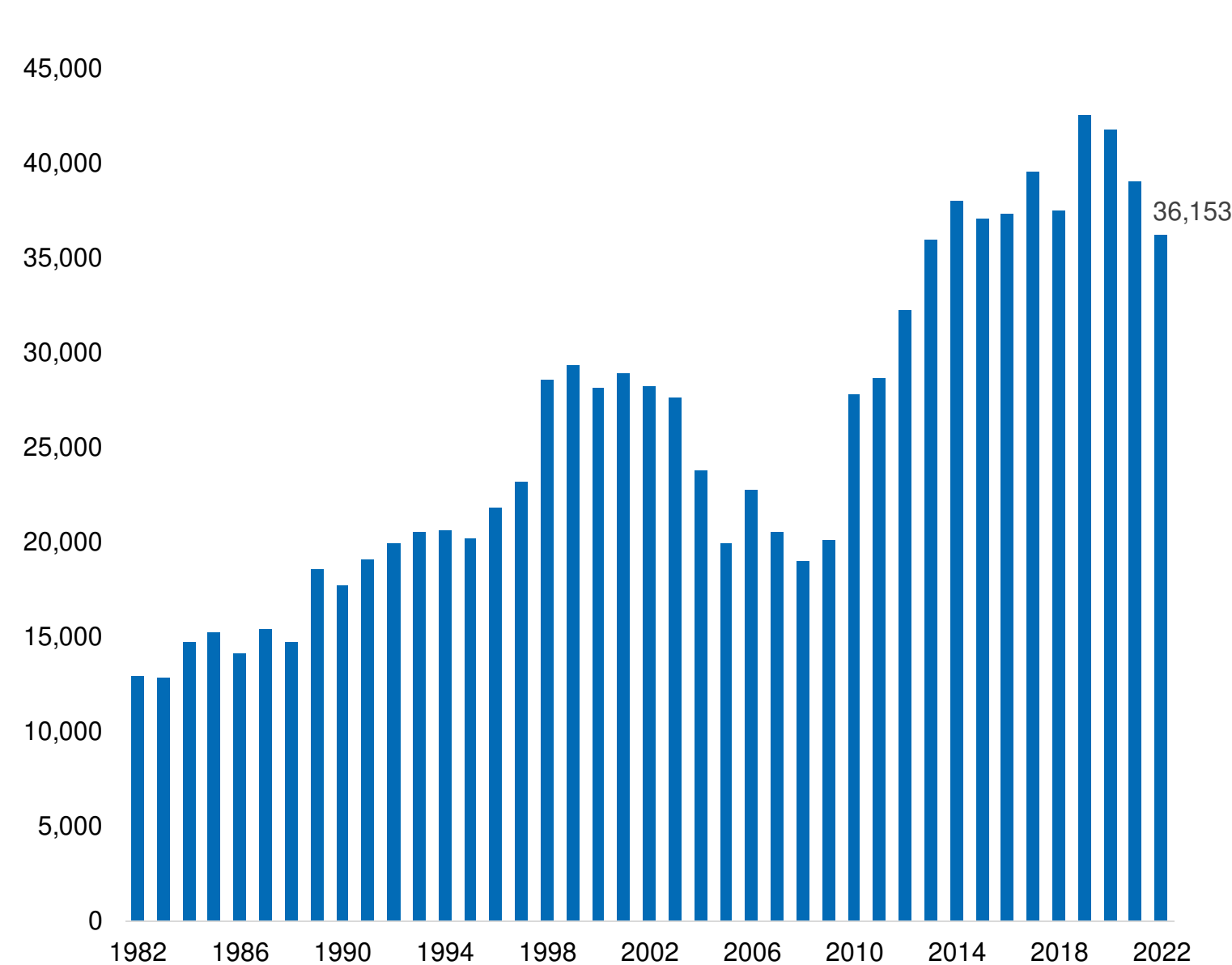
Source: Board of Governors of the Federal Reserve System, Newmark Research

As of September 2024

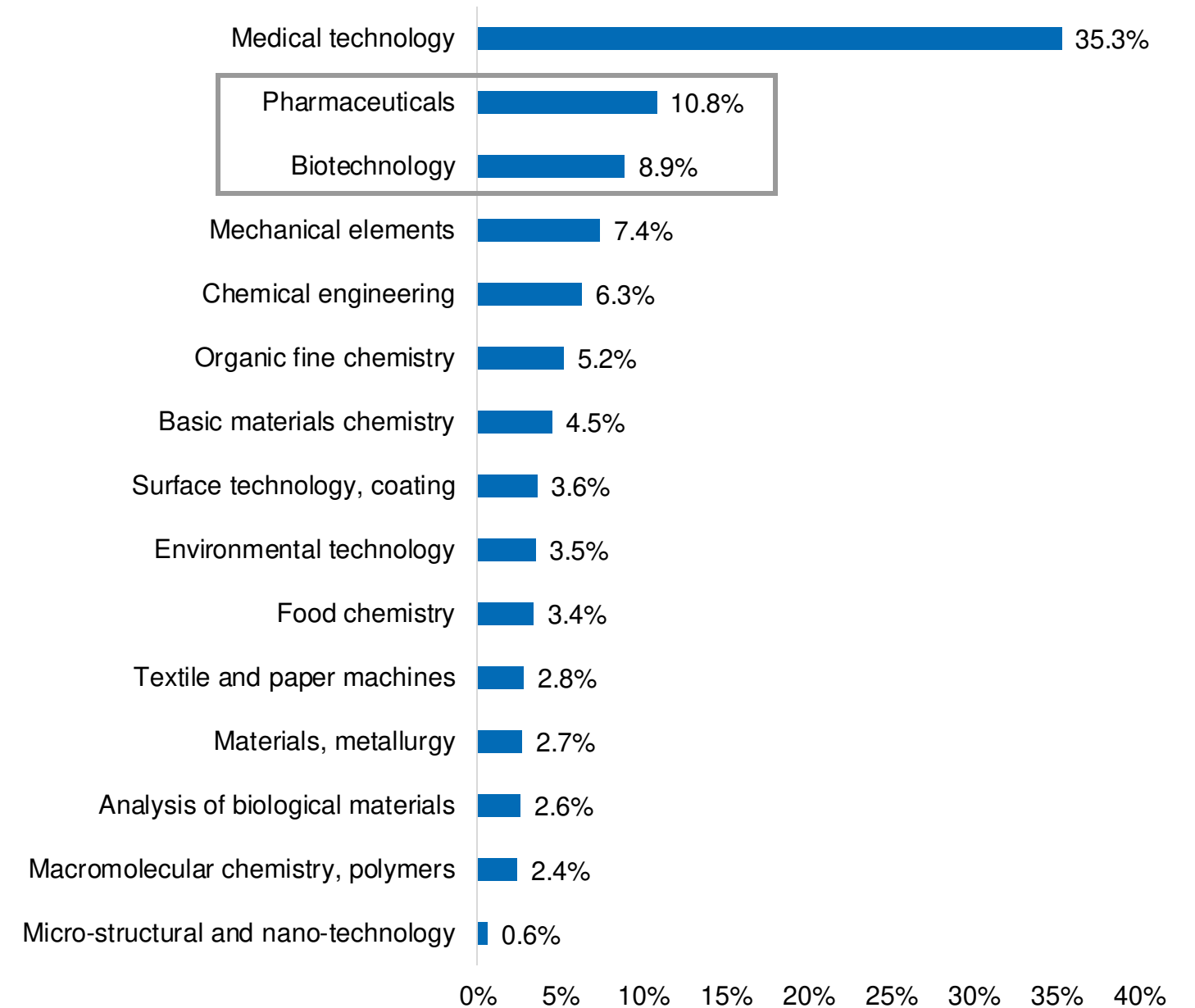
# The Impending Patent Cliff Stands to Reshape the Pharmaceutical Industry

Patents issued for biotech-related fields reached a two-year low in 2022. The pharmaceutical and biotechnology fields still represent close to 20.0% of all biotech-related patents issued. The impending “patent cliff” facing several big pharma companies is fast approaching and represents a key risk for investors. According to PharmaVoice, patents on 190 drugs will expire by 2030, which will ultimately impact sales revenue.

Biotech-Related Patents Issued by Year



2022 Patents by Field of Technology



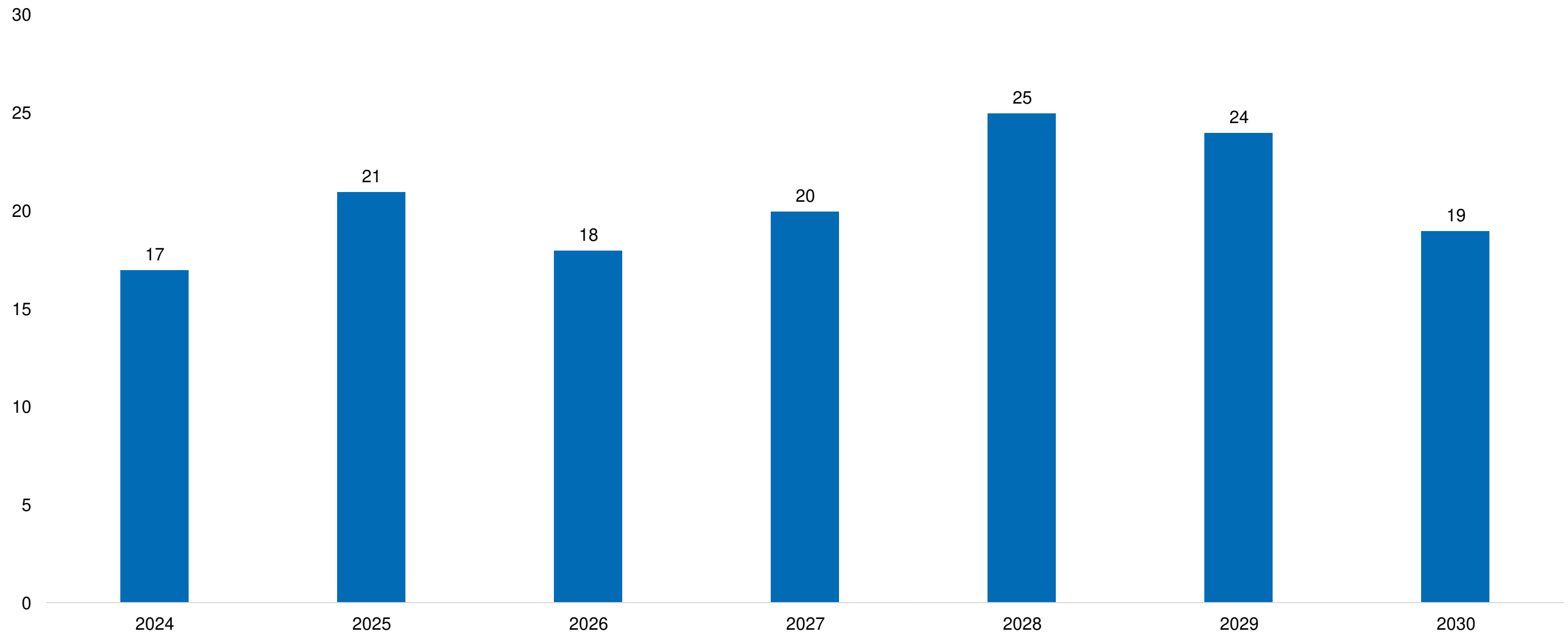
Source: WIPO Statistics Database, Healthpeak Properties, Newmark Research

As of 2022

# Imminent Patent Expiry Will Drive More Investment from Big Pharma

While the impending pharmaceutical “patent cliff” is drawing comparisons to prior periods of disruption, notably the 2012 to 2015 period and the early 2000s, current projections are for a more profound impact on the industry. Biopharma companies are diversifying their pipelines, implementing new innovations, and focusing on collaborations and acquisitions in response.

## Drug Patent Expirations | 18 Largest Pharmaceutical Companies



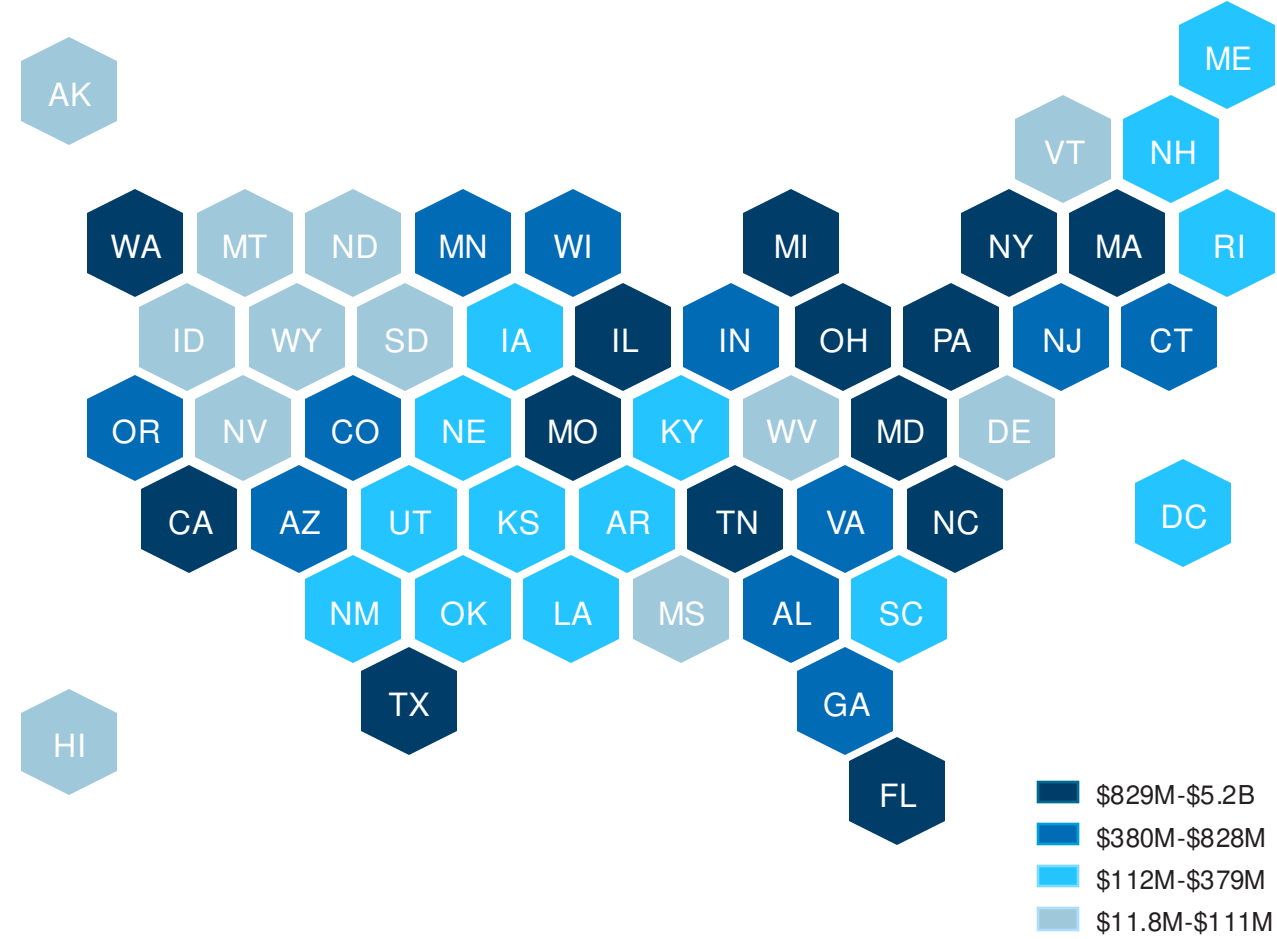
# States with Top Life Science Clusters Dominate Grant Funding

Federal funding for medical research and development is an important part of the U.S. life science ecosystem. It's not surprising, therefore, that states with mature life sciences industries top the list of NIH funding awards. The top five states accounted for 45.3% of NIH funding in the fiscal year 2024, with California leading the way.

**Top 10 Hospitals for NIH Funding, Fiscal Year 2024**

Rank	Hospital	Location	FY 2024 Funding
1	Massachusetts General Hospital	Boston	\$673M
2	Vanderbilt University Medical Ctr	Nashville	\$546M
3	Brigham and Women's Hospital	Boston	\$407M
4	Boston Children's Hospital	Boston	\$234M
5	Children's Hospital of Philadelphia	Philadelphia	\$175M
6	Cincinnati Children's Hospital	Cincinnati	\$170M
7	Dana-Farber Cancer Institute	Boston	\$164M
8	Beth Israel Deaconess Medical Ctr	Boston	\$147M
9	Seattle Children's Hospital	Seattle	\$123M
10	St. Jude Children's Hospital	Memphis	\$112M

**NIH Funding by State, Fiscal Year 2024**



- 5** 5 of the top 10 hospitals for 2024 NIH funding are in Boston.
- \$2.4** The top U.S. hospitals captured \$2.8 billion in 2024 funding
- 46%** The top 5 states received 45.3% of all 2024 NIH funding.
- 11** More than 10 states were awarded \$1.0 billion+ in 2024.

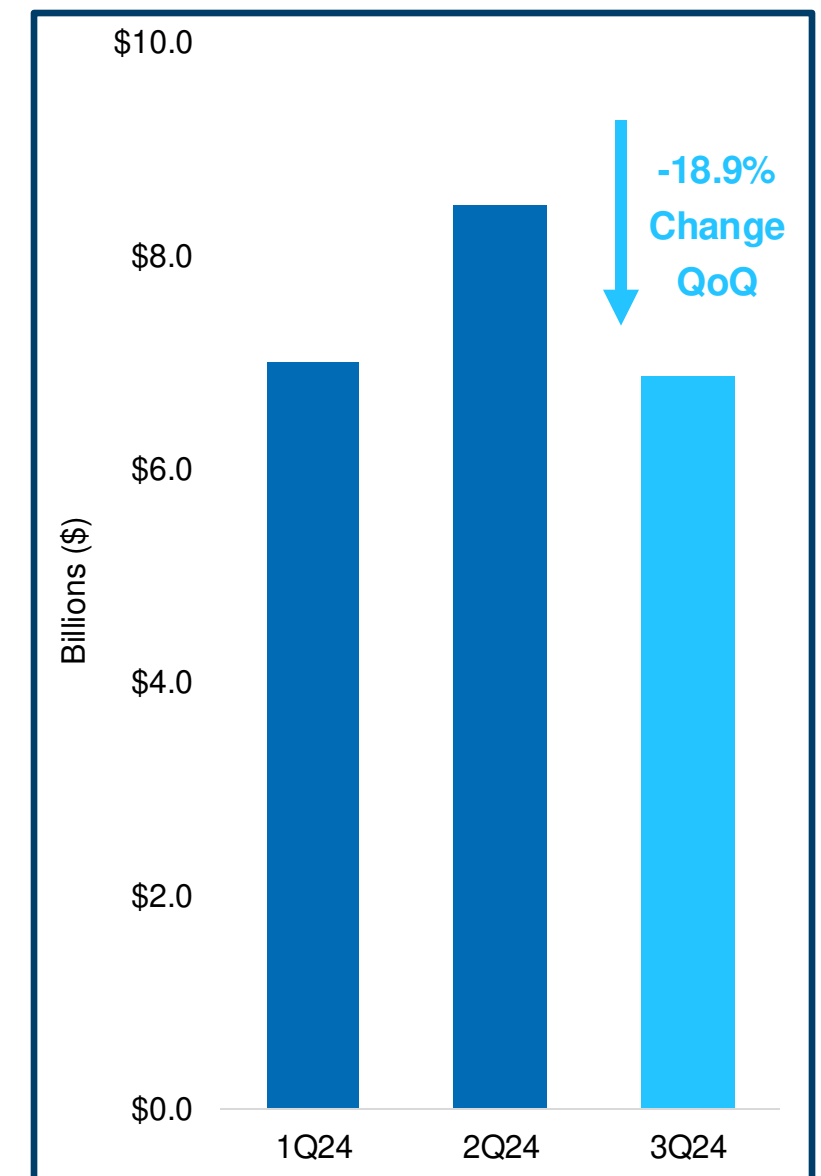
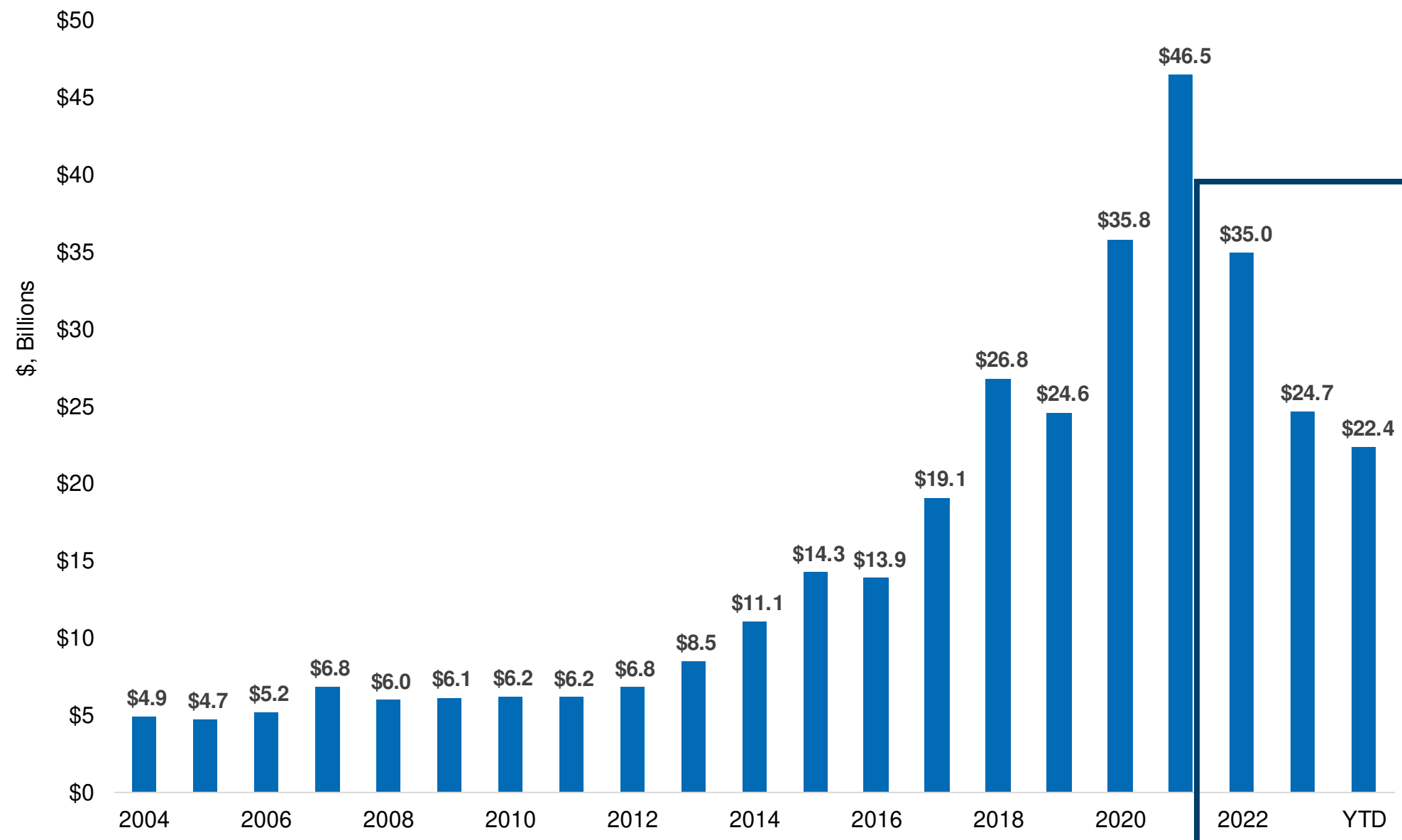
Source: National Institutes of Health, Newmark Research

As of FY 2024

# Venture Capital Funding On Pace to Surpass 2023 Levels

Despite declining moderately during the third quarter, year-to-date venture capital funding for U.S. life science companies surpassed \$22 billion and is on pace to outstrip last year's totals. Increasing deal sizes indicate continued selectiveness among investors when deploying capital. Life science companies with the most promising science should still be able to raise capital, but they will need to do more with less.

Annual VC Funding (2004-2024)



Source: PitchBook, Newmark Research

As of Q3 2024

# The Venture Capital Landscape is on More Positive Footing

2Q 2024

**\$8.5B**

Raised

750+ deals

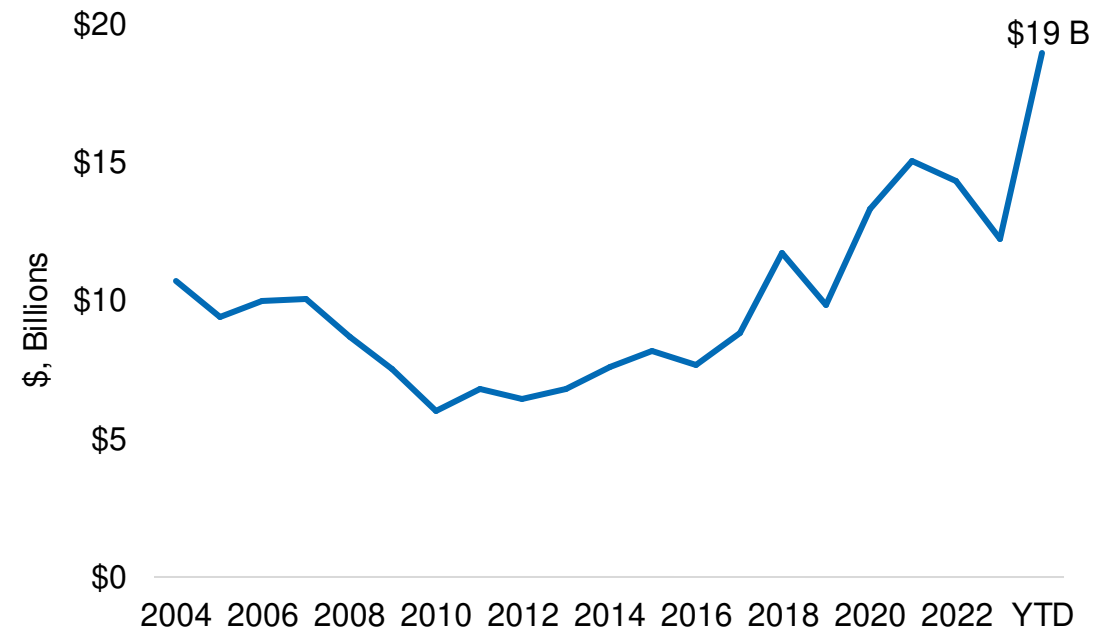
\$20.3M average round

3Q 2024

**\$6.9B**

Raised

Average Round Size



## The Outlook for VC Funding is Looking Brighter

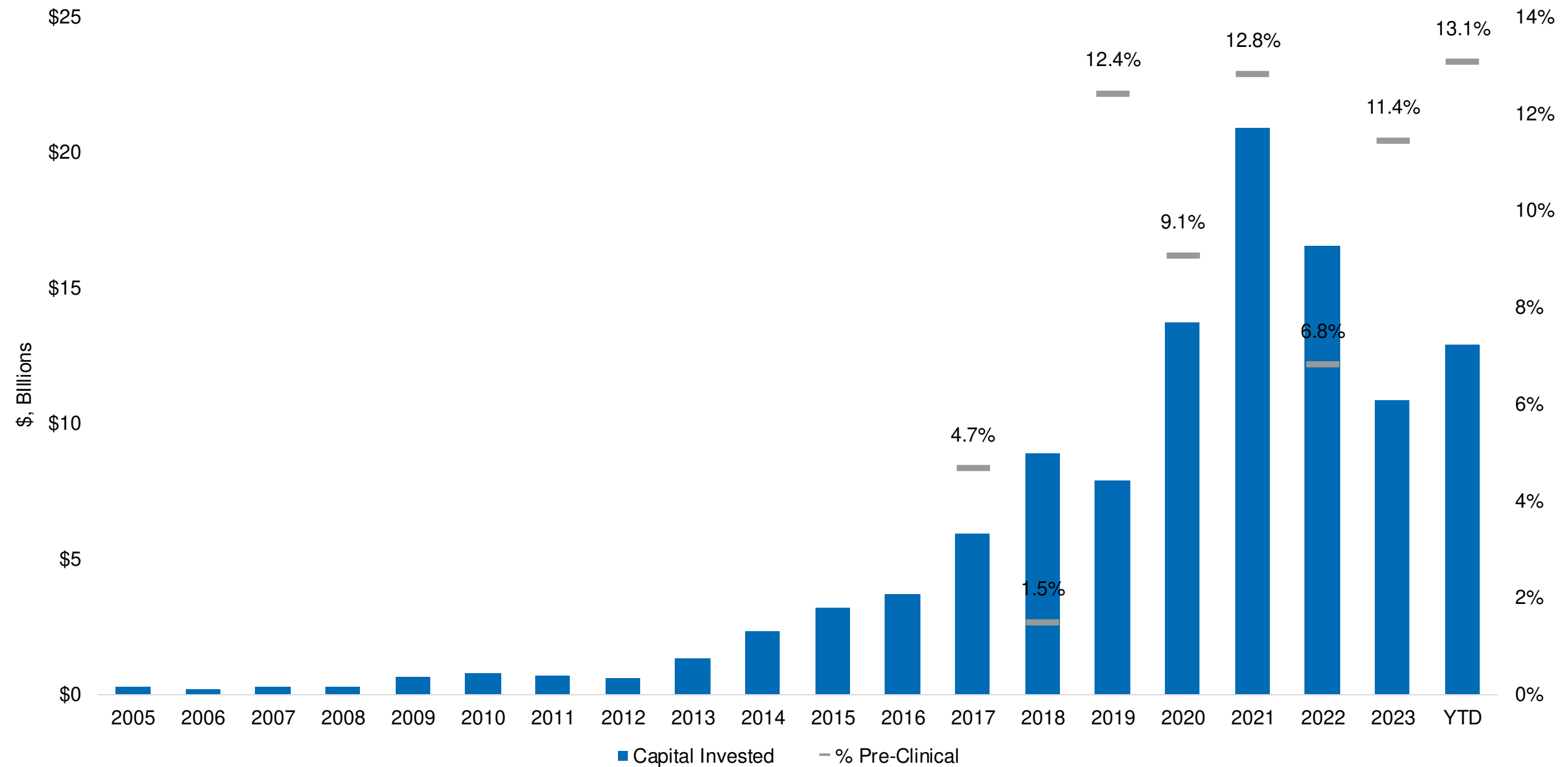
New and established venture capital funds have raised billions of dollars to invest in biotech and life science companies. Expectations for capital deployment should improve as a result. Below is a list of select funds recently closed.

Firm	Fund Size	Closed
Bain Capital Life Sciences	\$3.0B	Q3 2024
Flagship Pioneering	\$3.6B	Q3 2024
Frazier Life Sciences	\$630M	Q3 2024
J.P. Morgan Private Capital	\$500M	Q2 2024
Foresite Capital	\$900M	Q2 2024
Sands Capital	\$555M	Q2 2024
Regeneron Ventures	\$500M	Q2 2024
Decheng Capital	\$700M	Q2 2024
Goldman Sachs Asset Management	\$650M	Q1 2024
Scion Life Sciences	\$310M	Q1 2024
ORI Capital	\$260M	Q1 2024
ARCH Ventures	\$3.0B	Q1 2024

# Return of the Venture “Mega-Round” in Biotech

Venture capital funding raised from “mega-rounds” is increasing in the biotech sector. Year-to-date, 75 life science companies raised \$100 million or more for a total of \$13 billion in capital invested. The share of total funding focused on pre-clinical companies has also reached a cyclical high, indicating increasing confidence among venture capitalists in this space. The growing number of larger funding events points to the continued flight-to-quality and de-risk within the industry.

Annual \$100M+ VC Funding (2005-2024)



Source: PitchBook, Newmark Research

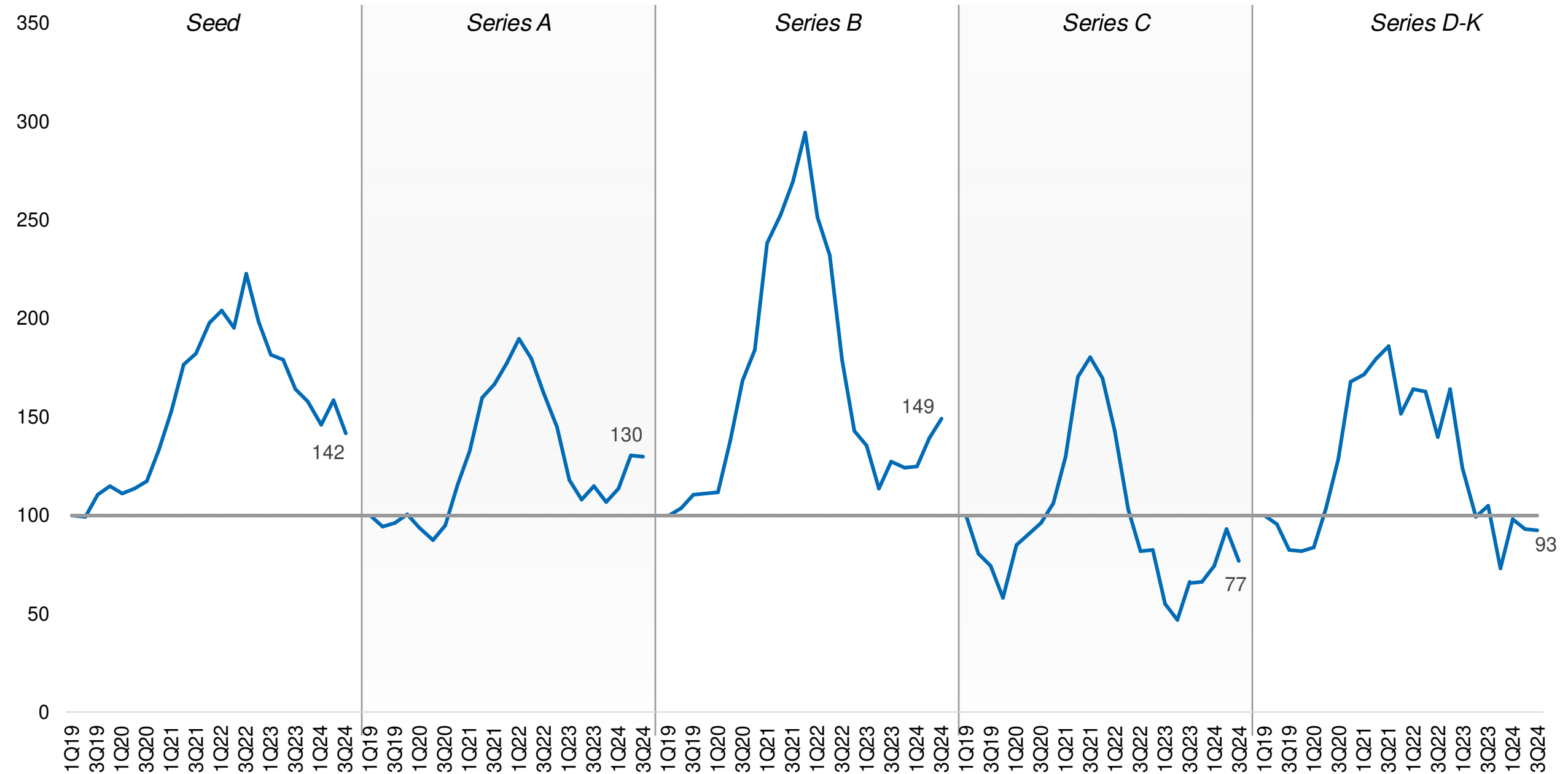
As of Q3 2024



# Early-Stage Venture Funding is Faring Better

Despite trending downward, Seed funding for biotech companies is still well above 2019 levels while Series A and B funding continued to improve throughout the last 12 to 18 months. Later-stage rounds remain subdued as investors continue to exhibit cautiousness due to limited exit opportunities, lingering concerns about valuations and market volatility.

VC Funding by Series | 4-Quarter Moving Average | Indexed to 2019



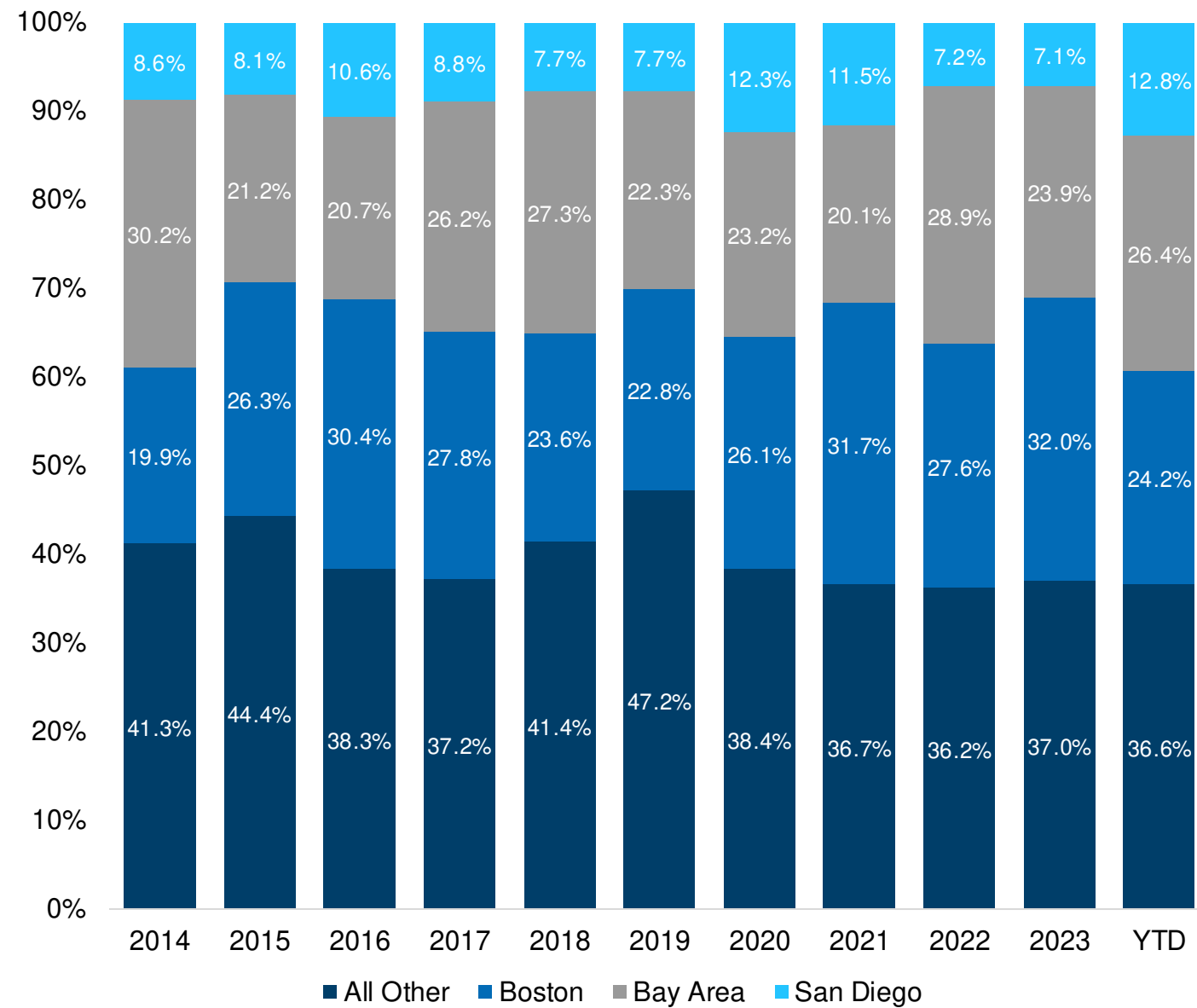
Source: PitchBook, Newmark Research

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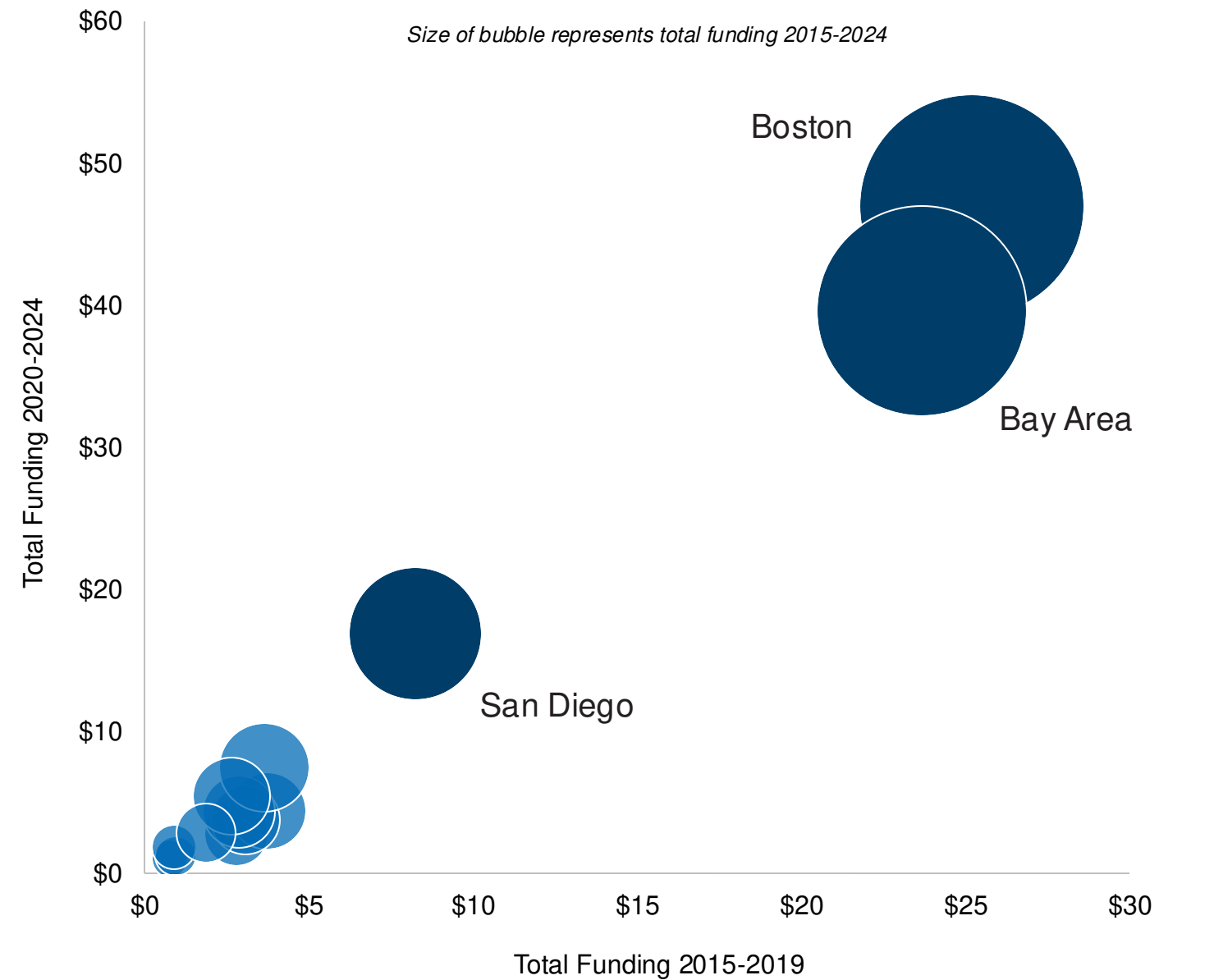
# VC Funding is Trending More Positively in the Bay Area and San Diego

The top three life science hubs in the U.S. consistently attract roughly 60.0% of all venture capital funding annually. Through the third quarter of 2024, life science companies based in these three markets raised \$14.2 billion in funding. San Diego's share of total volumes is at 10-year high following marked gains in funding compared to 2023. Markets where funding is also trending above last year's totals include Raleigh/Durham (Research Triangle), New York City, and Northern New Jersey.

Historical Life Science Funding: Top 3 Clusters as % of Total



Historical Life Science Funding: By Metro (in billions)



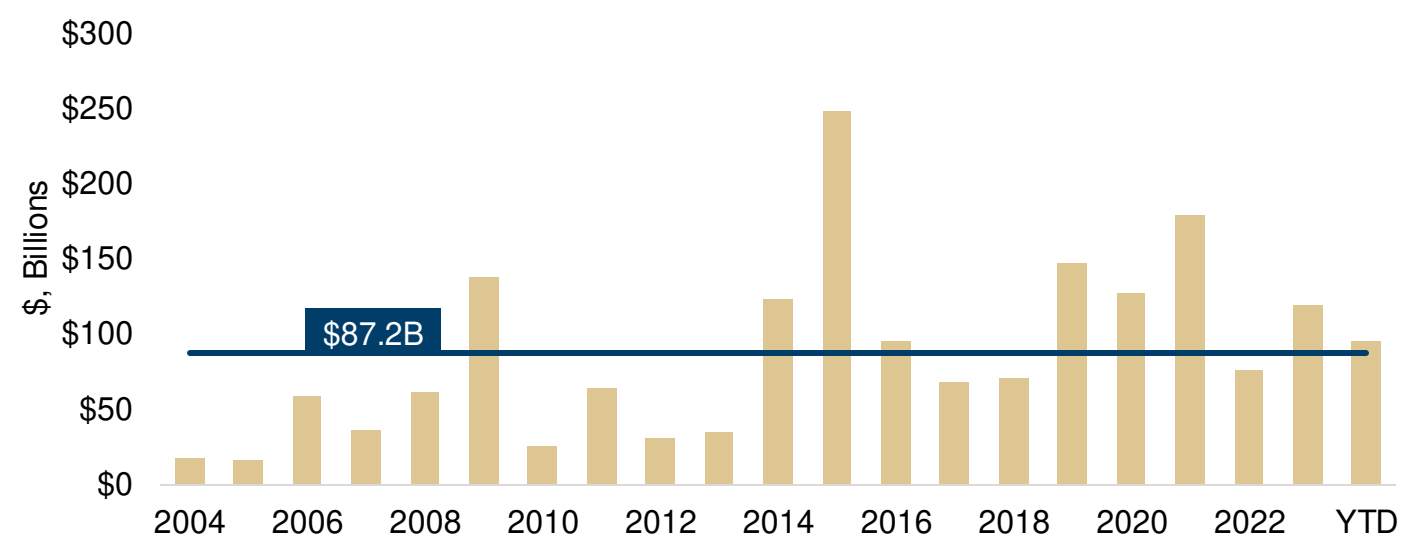
Source: Pitchbook, Newmark Research

As of Q3 2024

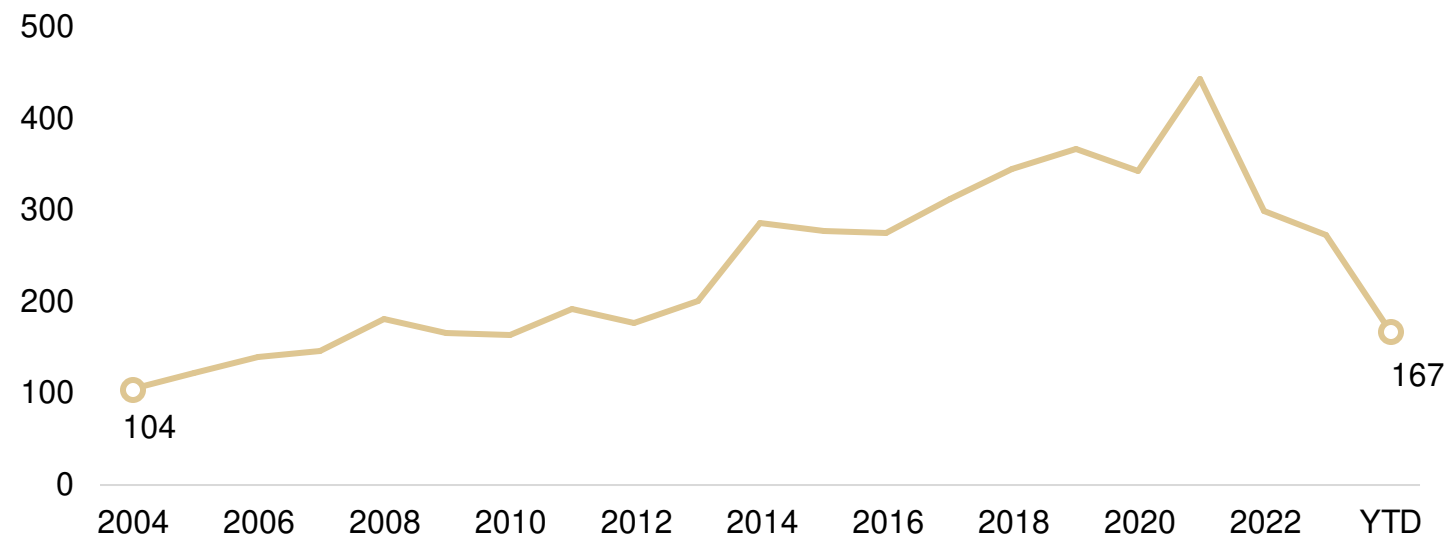
# M&A Momentum Continues into 2024

Life science M&A activity will end 2024 above the long-term average as large pharmaceutical companies like AbbVie and Eli Lilly continue to execute acquisitions. Deal volume reached \$94.6 billion through the third quarter of 2024 and is only 20% below the previous year's totals. Boston, San Diego and Seattle accounted for an above-average share of M&A activity this year.

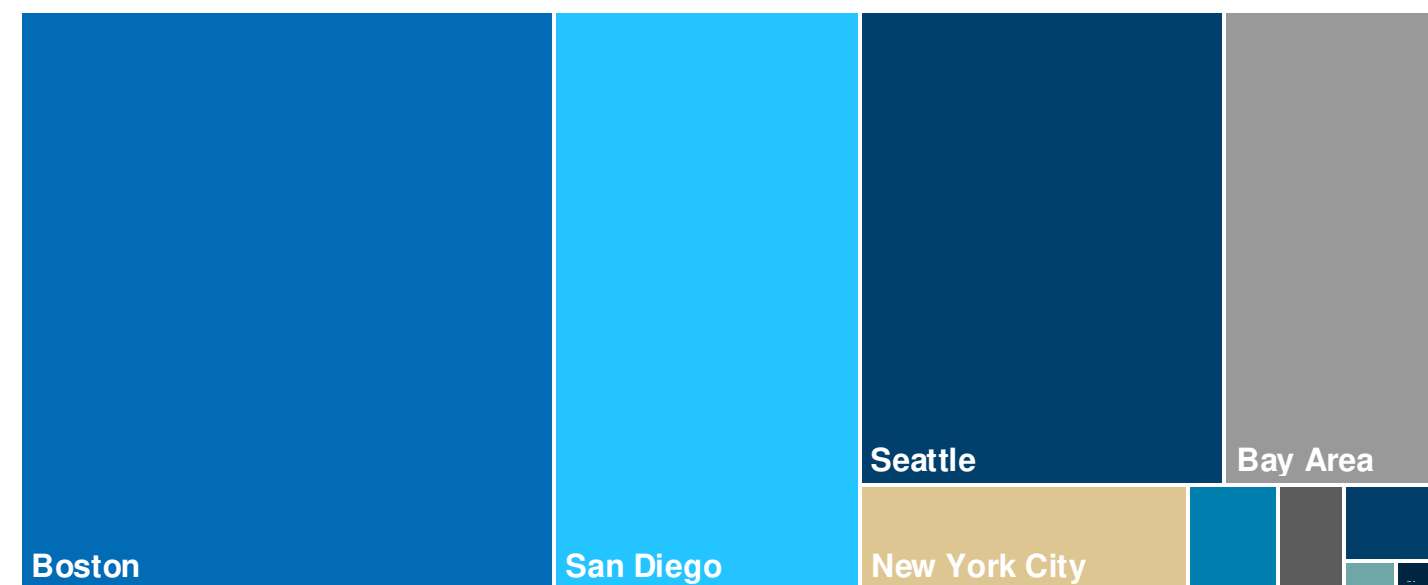
## U.S. Life Science M&A Activity | Capital Invested



## U.S. Life Science M&A Activity | Deal Count



## Share of Year-to-date Life Science M&A Volume (\$)



## Top Q3 2024 Life Science M&A Transactions

Year	Acquisition	Buyer	Acquisition Price
2024	Cerevel Therapeutics	AbbVie	\$8.7B
2024	Morphic Therapeutic	Eli Lilly	\$3.2B
2024	Nerio Therapeutics	Boehringer Ingelheim	\$1.3B
2024	HI-Bio	Biogen	\$1.2B
2024	Ironshore Therapeutics	Collegium Pharma	\$646M
2024	Mirus Bio	Merck	\$600M
2024	Seres Therapeutics	Nestle Health Science	\$525M
2024	Alimera Sciences	ANI Pharmaceuticals	\$381M

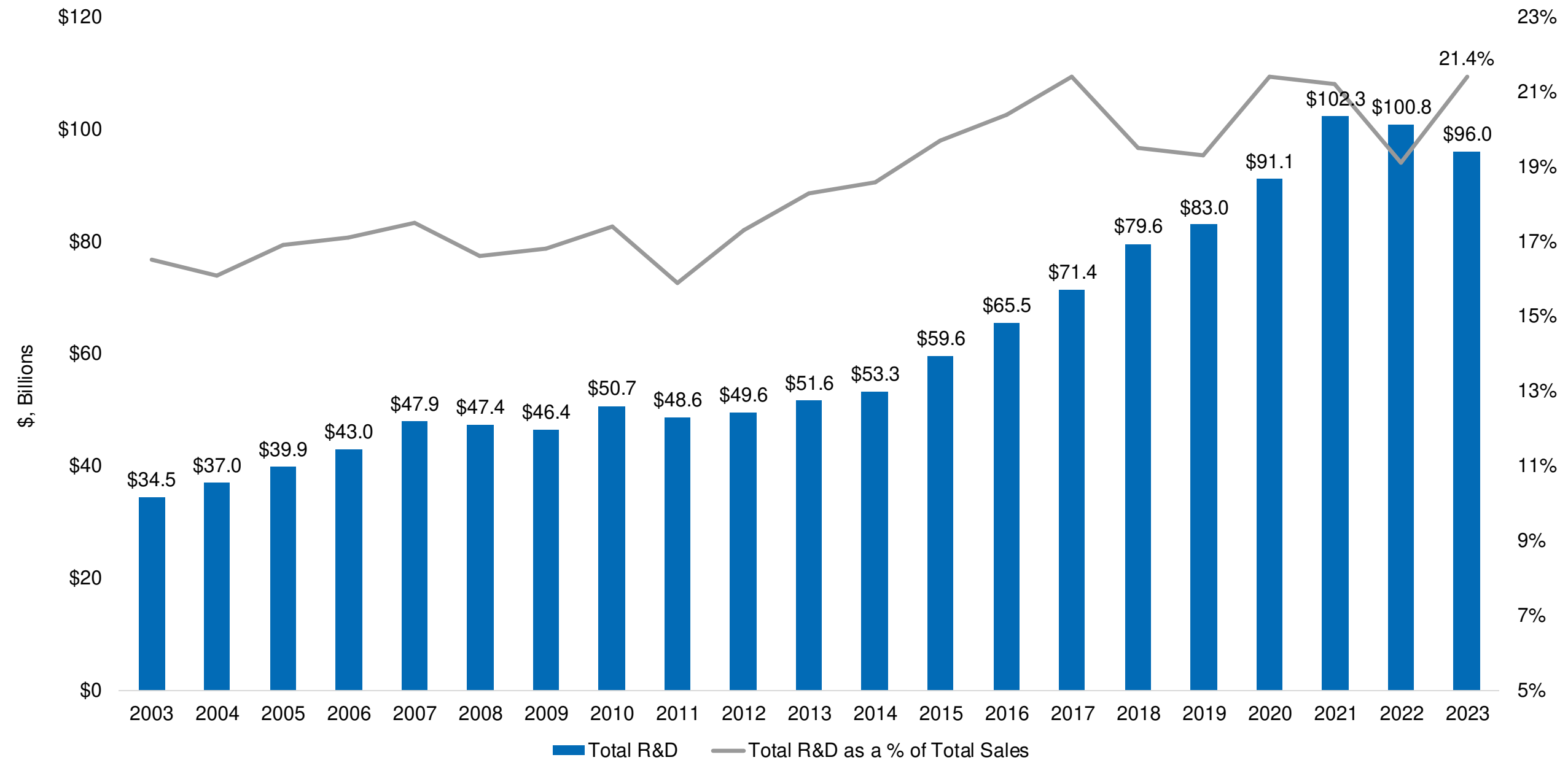
Source: Pitchbook, Newmark Research

As of Q3 2024

# R&D Spending Declines Amid Sector Headwinds

Challenges within the broader life science industry have led many pharma companies to reevaluate spending on research and development (R&D), leading to a modest correction in expenditures from 2021 to 2023. While cuts in costs can lead to less innovation, pharma companies are still spending near-peak levels on R&D.

Domestic Biopharma R&D and R&D Abroad, PhRMA Member Companies



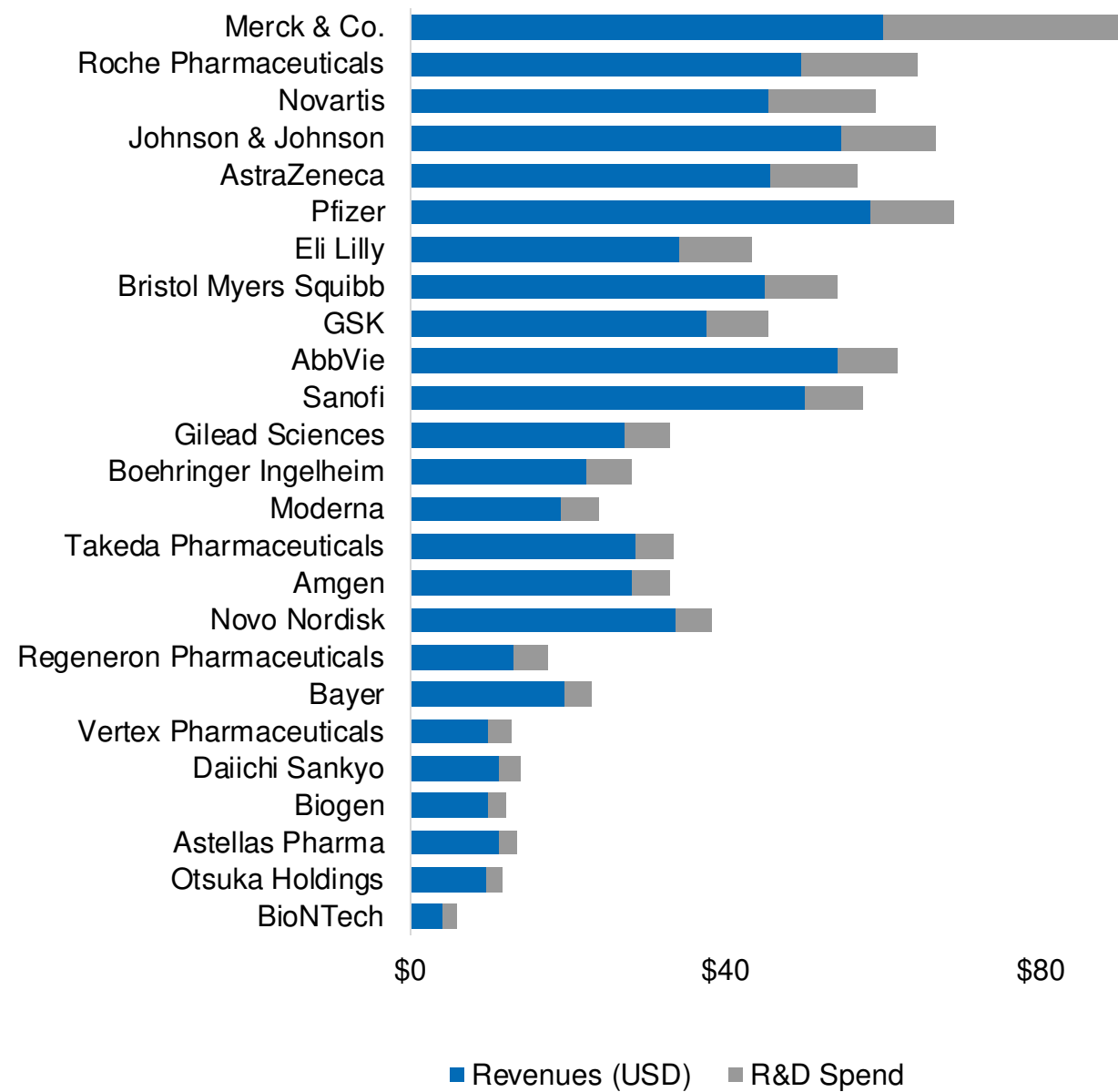
Source: Pharmaceutical Research and Manufacturers of America (PhRMA Member Companies), Newmark Research

As of 2023

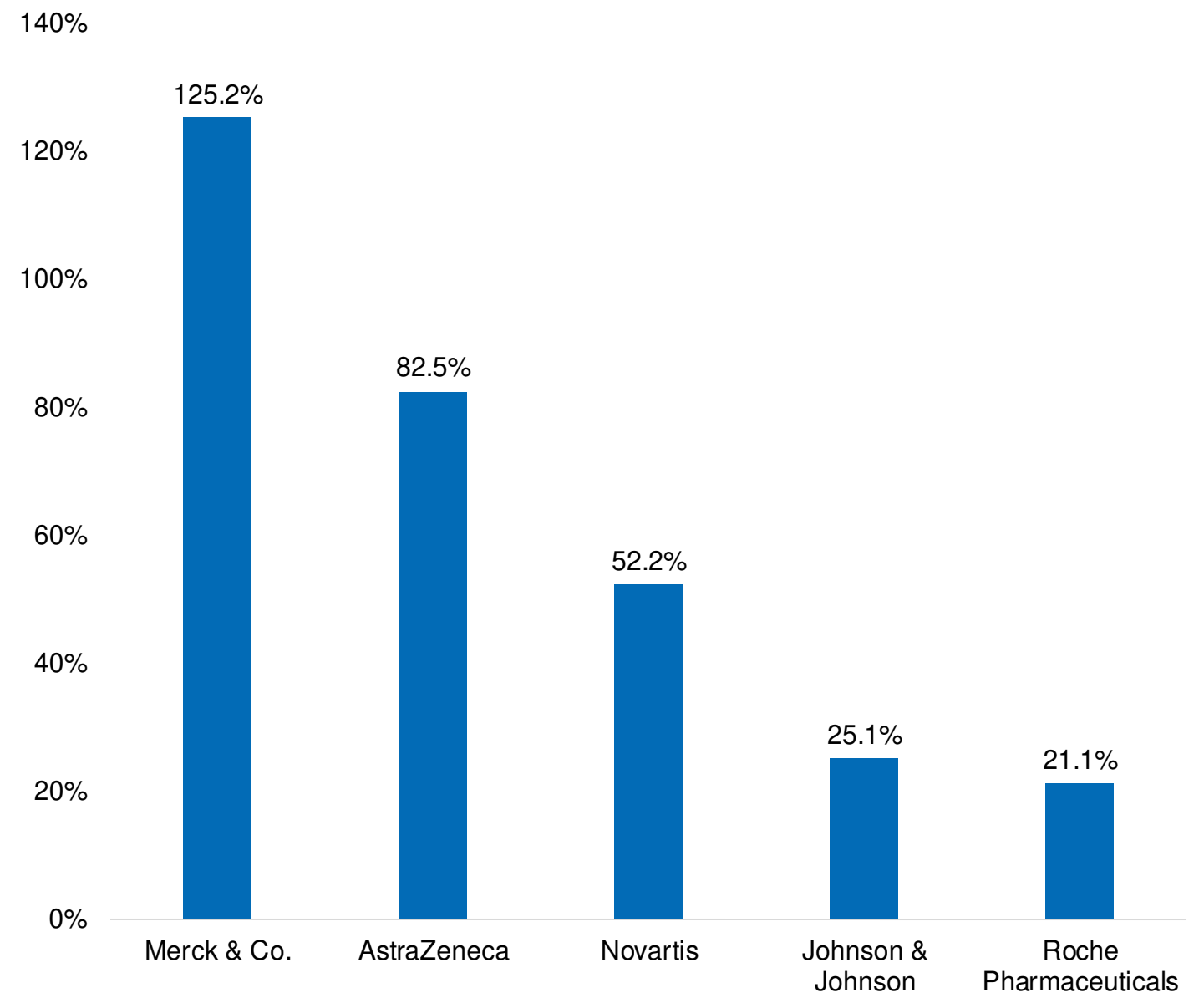
# Top 20 Pharma Companies Post Increase in R&D Expenditures

According to Drug Discovery & Development, most large pharmaceutical companies are dedicating 14% to 30% of revenues to R&D, with Merck & Co. allocating \$30.5 billion for R&D spending in 2023. As the largest source driving life science research and development, a resurgence in spending would bode well for growth this sector.

Select 2023 Revenue and R&D Spending (in billions)



Growth in R&D Spending (2020 to 2023)



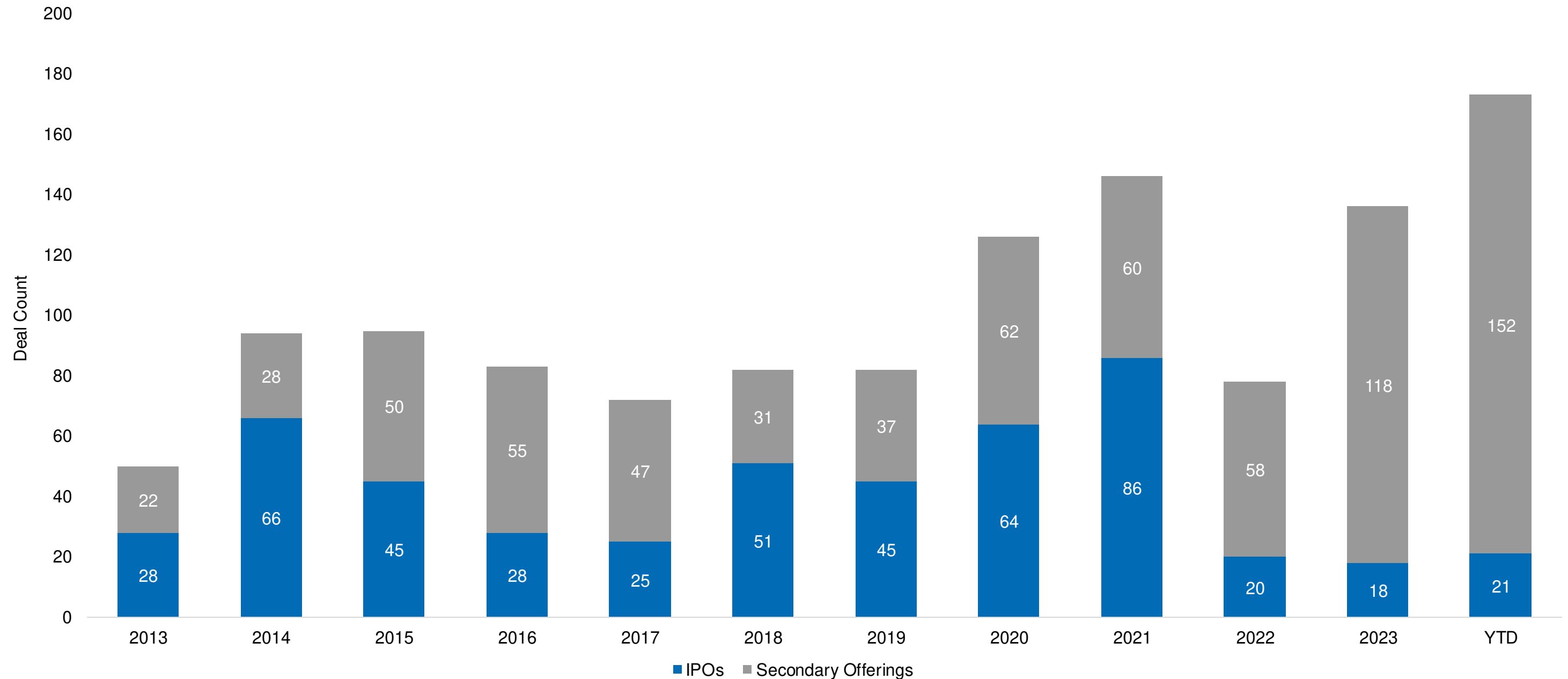
Source: Drug Discovery & Development, Newmark Research

As of 2023

# The IPO Market Appears To Be Thawing, Signaling Positive Momentum

Interest rate cuts bolstered public offerings late in the third quarter of 2024. Year-to-date, 21 biotech companies went public and total capital raised reached a three-year high. The expanding IPO window bodes well for growth within the sector and will likely drive increased venture capital funding. With this in mind, investors are likely to remain focused on the highest-quality companies to mitigate downside risks.

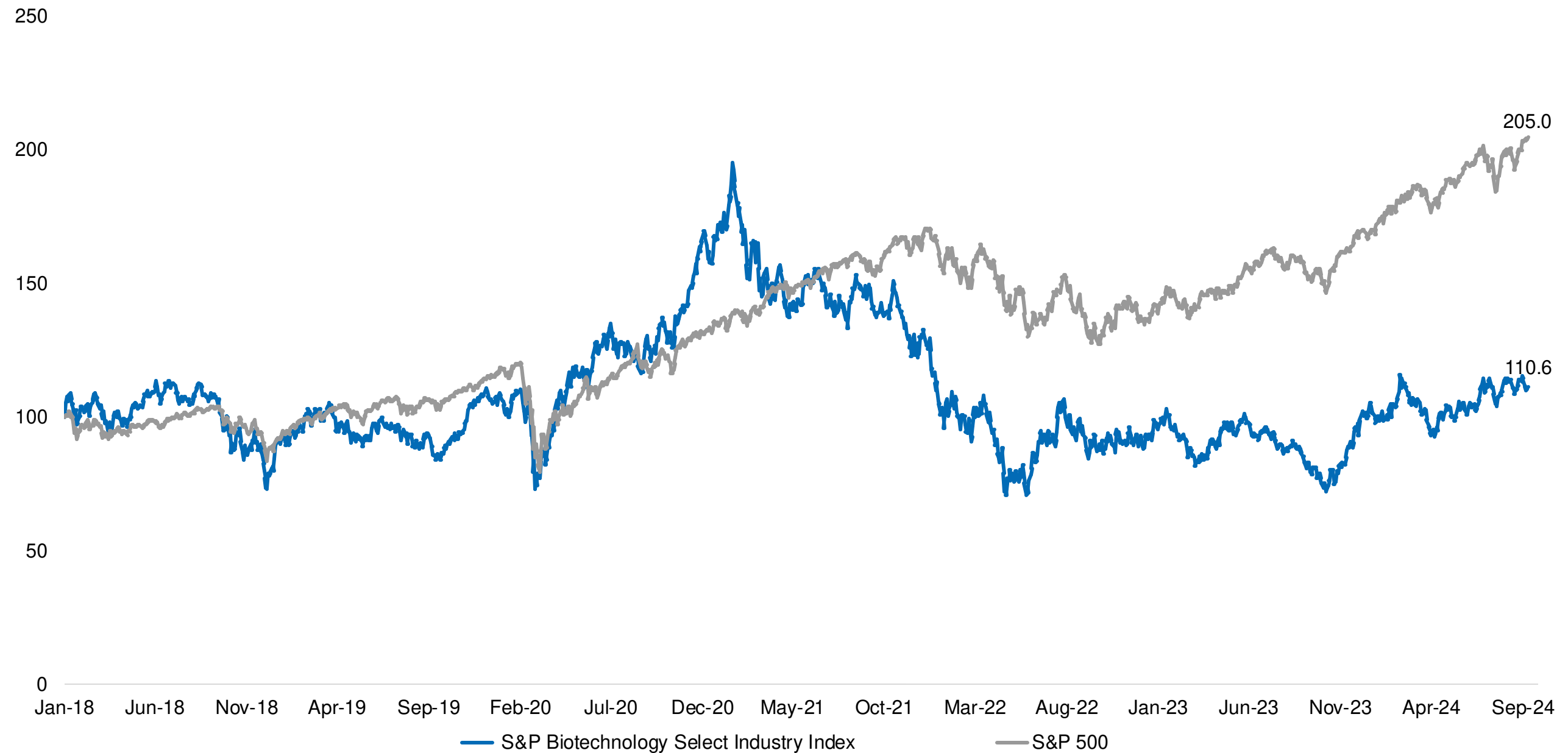
## Public Sources of Capital



# Recent IPO Aftermarket Performance is Critical for a Public Market Recovery

The S&P Biotech Index highlights the run-up in public company valuations and oversized initial public offerings. After peaking in late 2020 at the height of the market, the index continued to decline throughout most of 2023. Although a modest recovery in late 2023 set the stage for more gains heading into 2024, growth is still trailing the S&P 500 Index considerably.

## S&P Biotechnology Select Industry Index | S&P 500



# Industry and Talent Trends

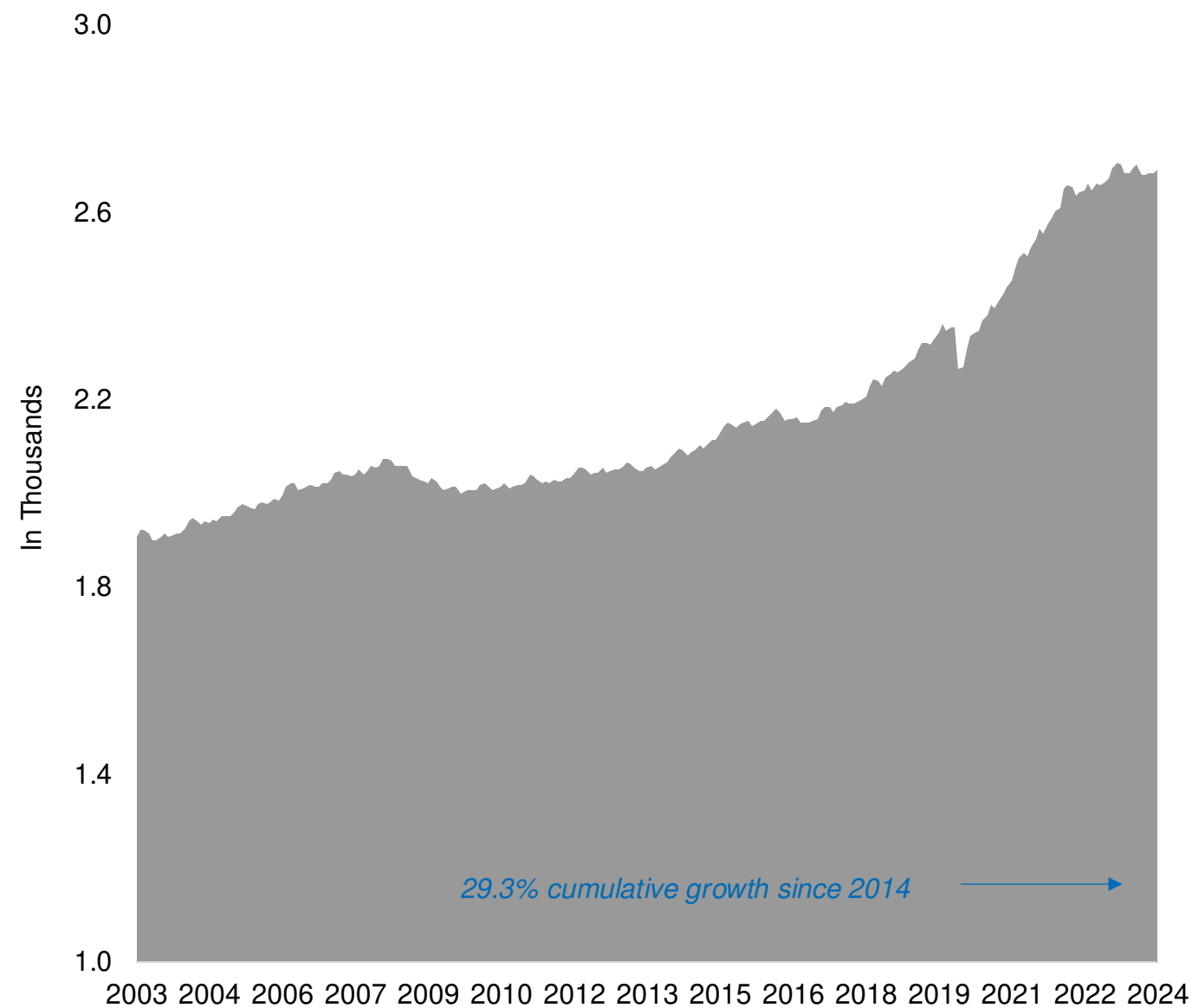




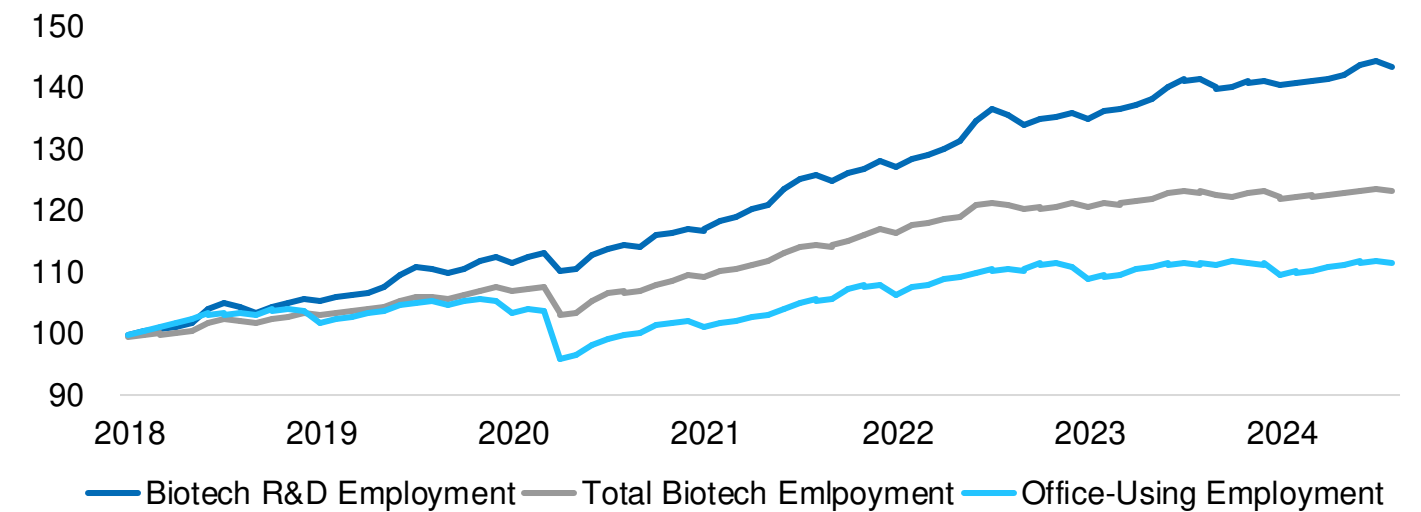
# Labor Market Headwinds Persists Across the Sector

By the end of 2023, annual gains in life science-related employment were trending below the sector's long-term average. Workforce reductions among biotech firms have lingered and will likely lead to more significant losses. Employment in research and development is faring better, with annual gains still in positive territory and outpacing growth in office-using employment sectors.

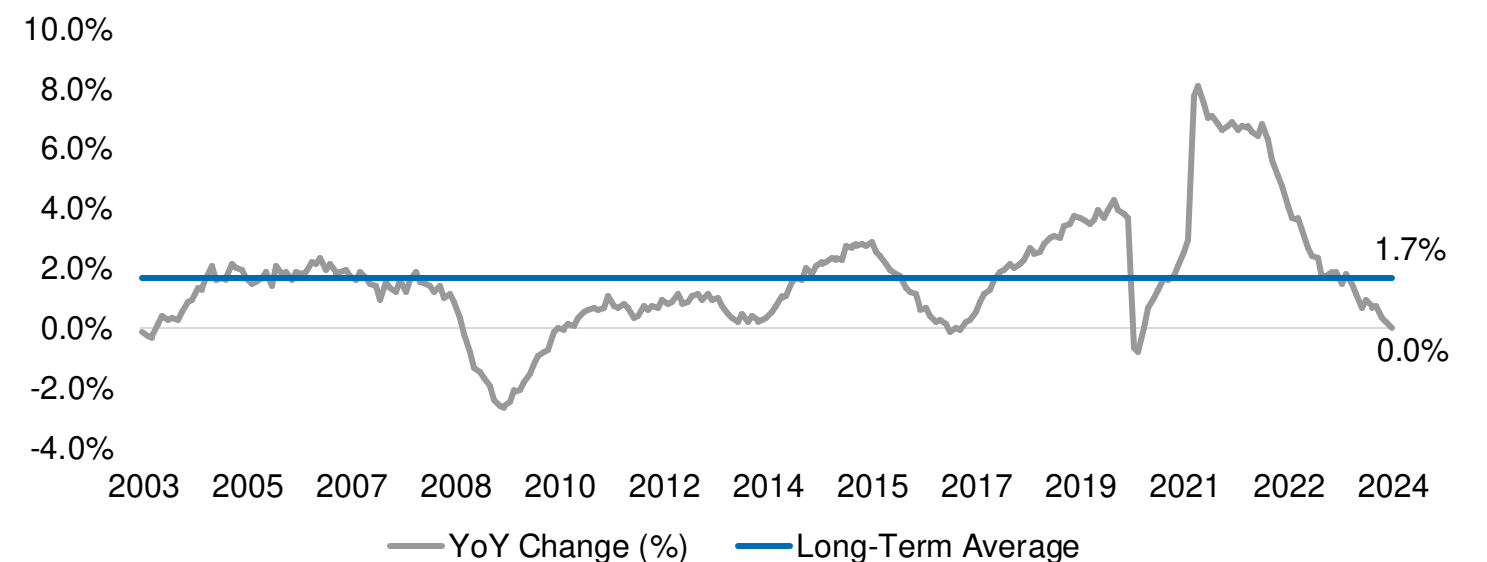
Total U.S. Biotech Employment



U.S. Employment Index



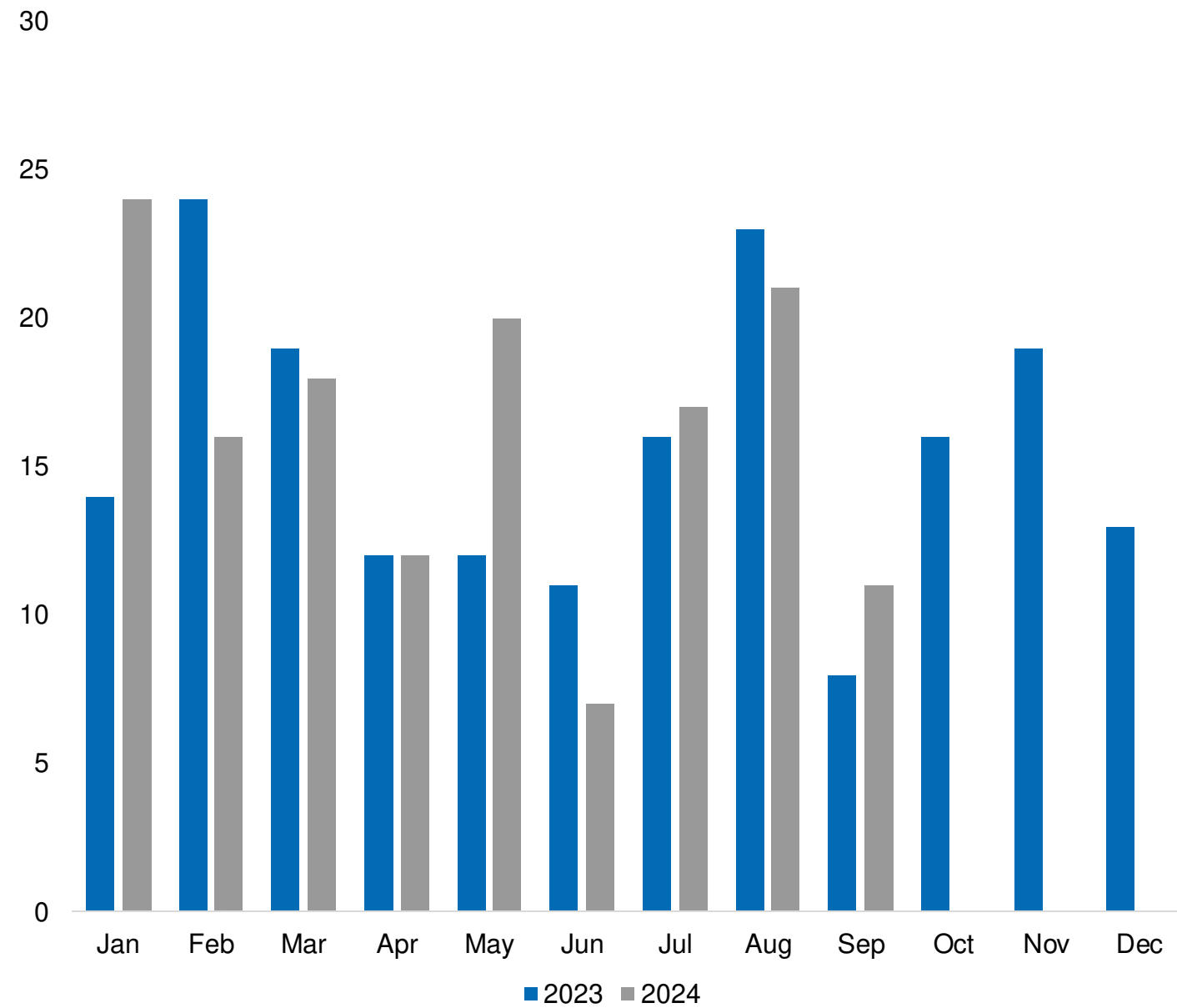
Change in Total U.S. Biotech Employment



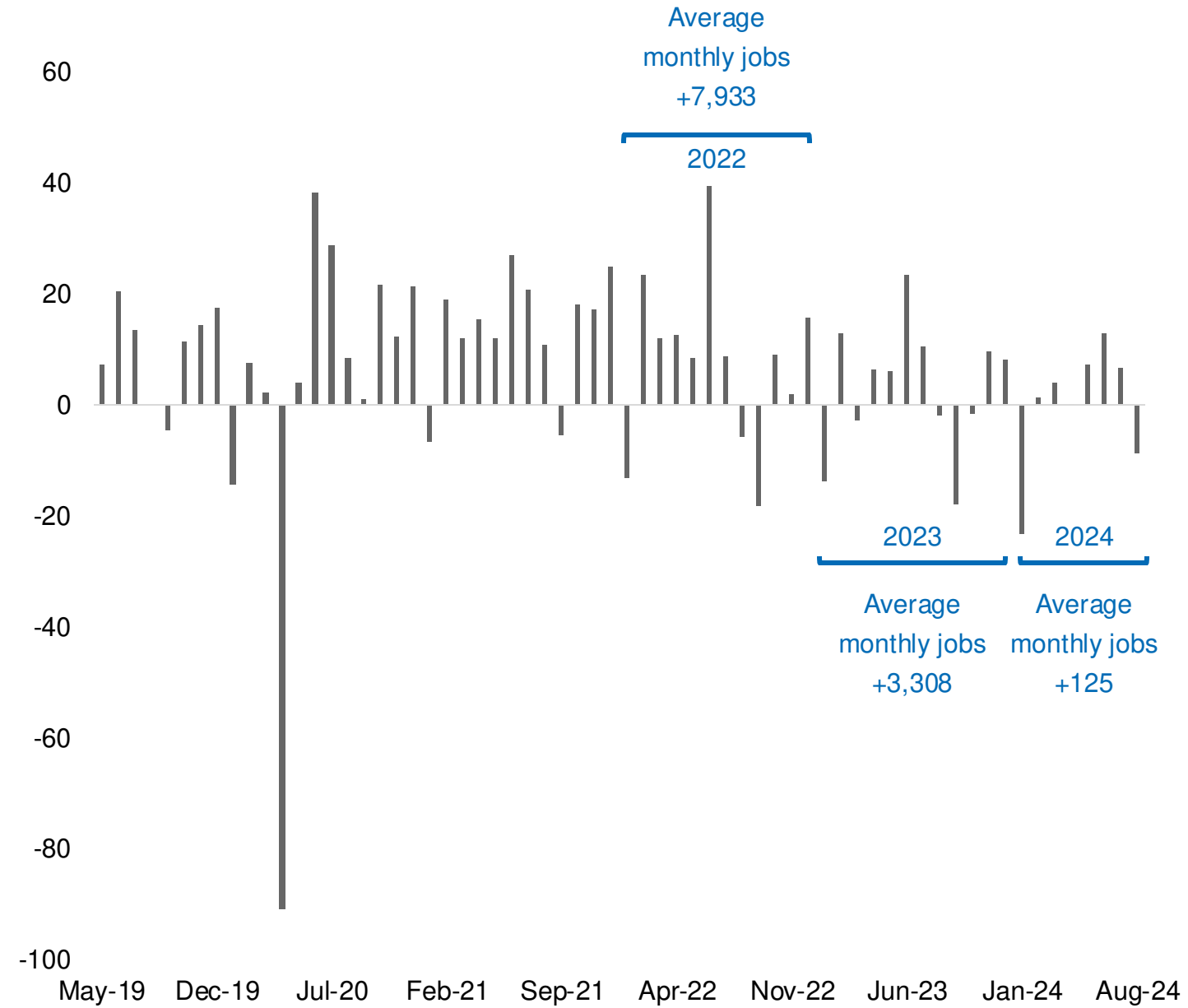
# Biotech Sector Layoffs Persist

Through September of 2024, 146 biotech companies announced layoffs, putting the sector on track to match last year's total of 187 announcements. Given the weakened labor market conditions, average monthly gains are negligible. Sector headwinds are likely to continue affecting labor markets in the near term.

Number of Life Science Companies Announcing Layoffs



Monthly Change in Life Science Employment



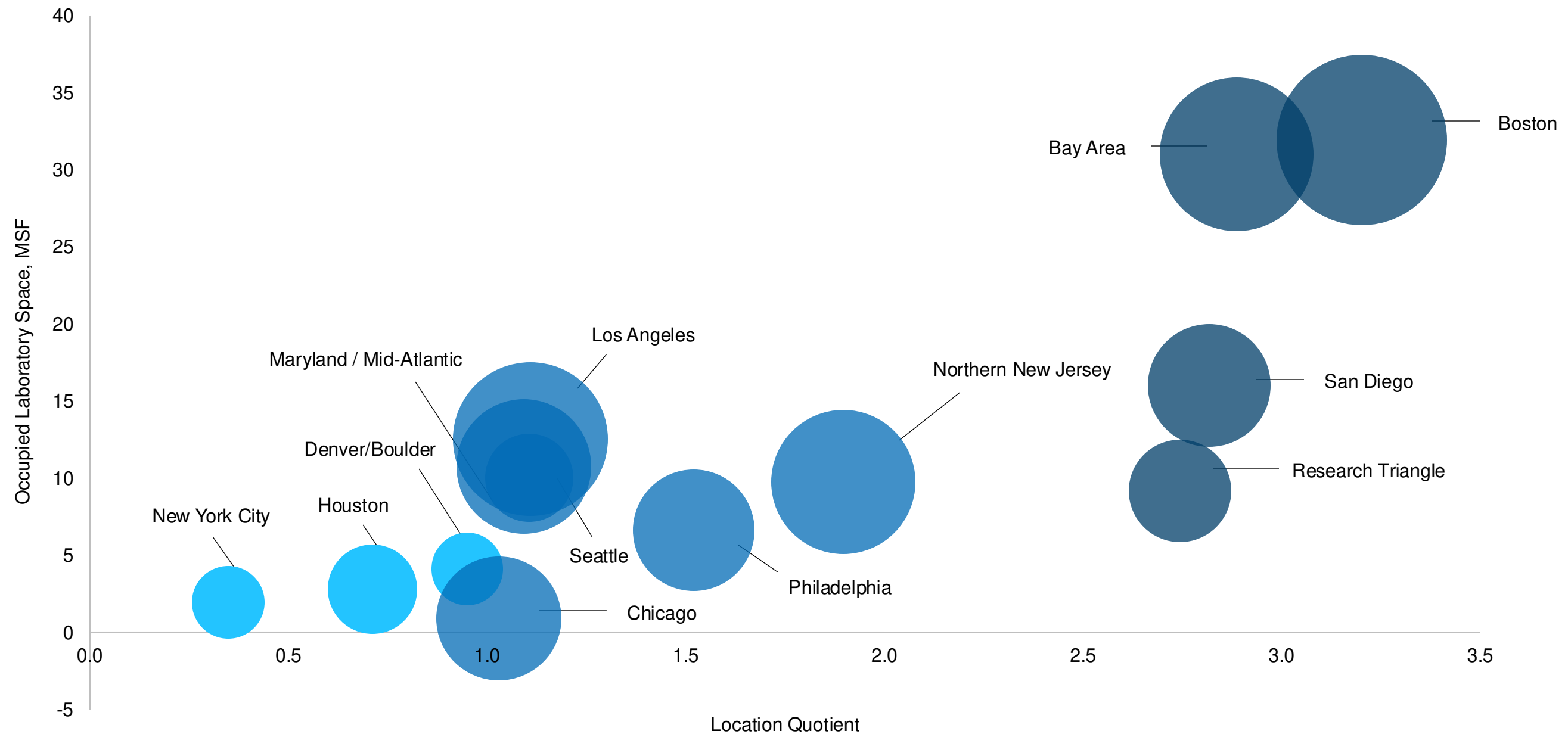
Source: Fierce Biotech, Moodys, Newmark Research

As of August/September 2024

# Key Hubs Maintain High Occupation Density

The top four life science markets boast the highest concentrations of biotech employment within the U.S. Access to a deep talent pool remains a critical driver of tenant demand and industry growth.

## Size and Density of Biotech Employment



Source: JobsEQ, Newmark Research

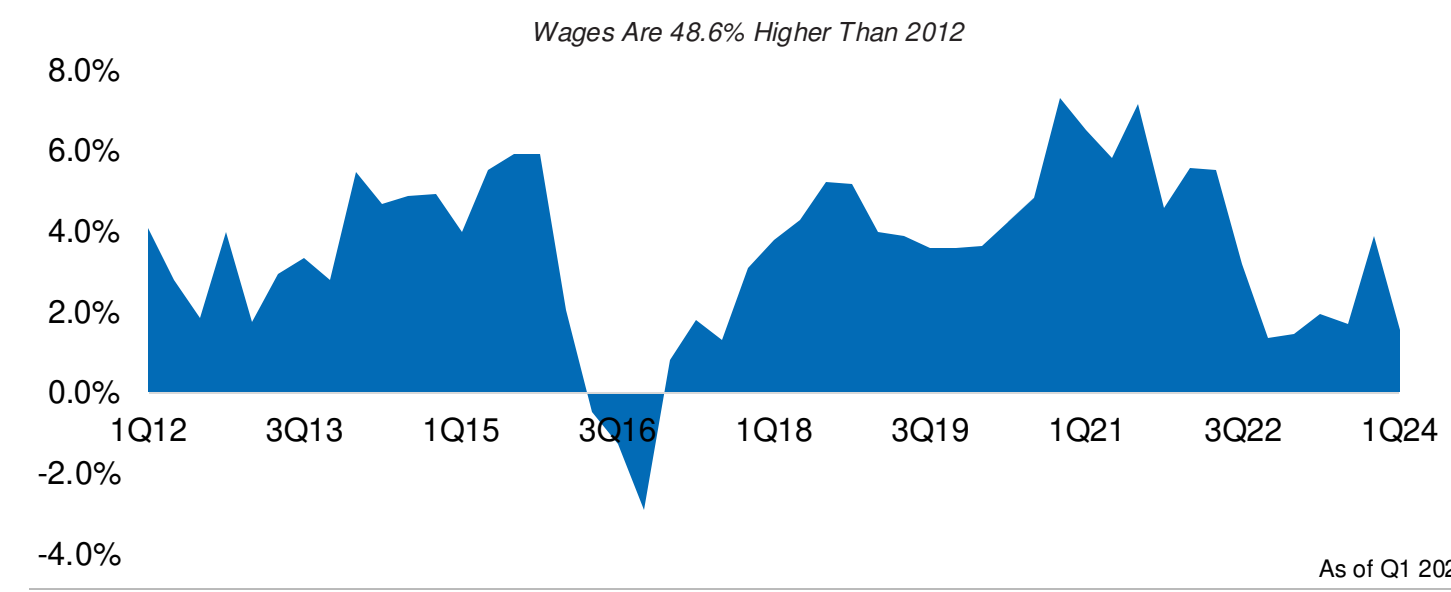
Size of bubble represents total biotech employment

# Job Openings Have Improved in the Life Science Sector

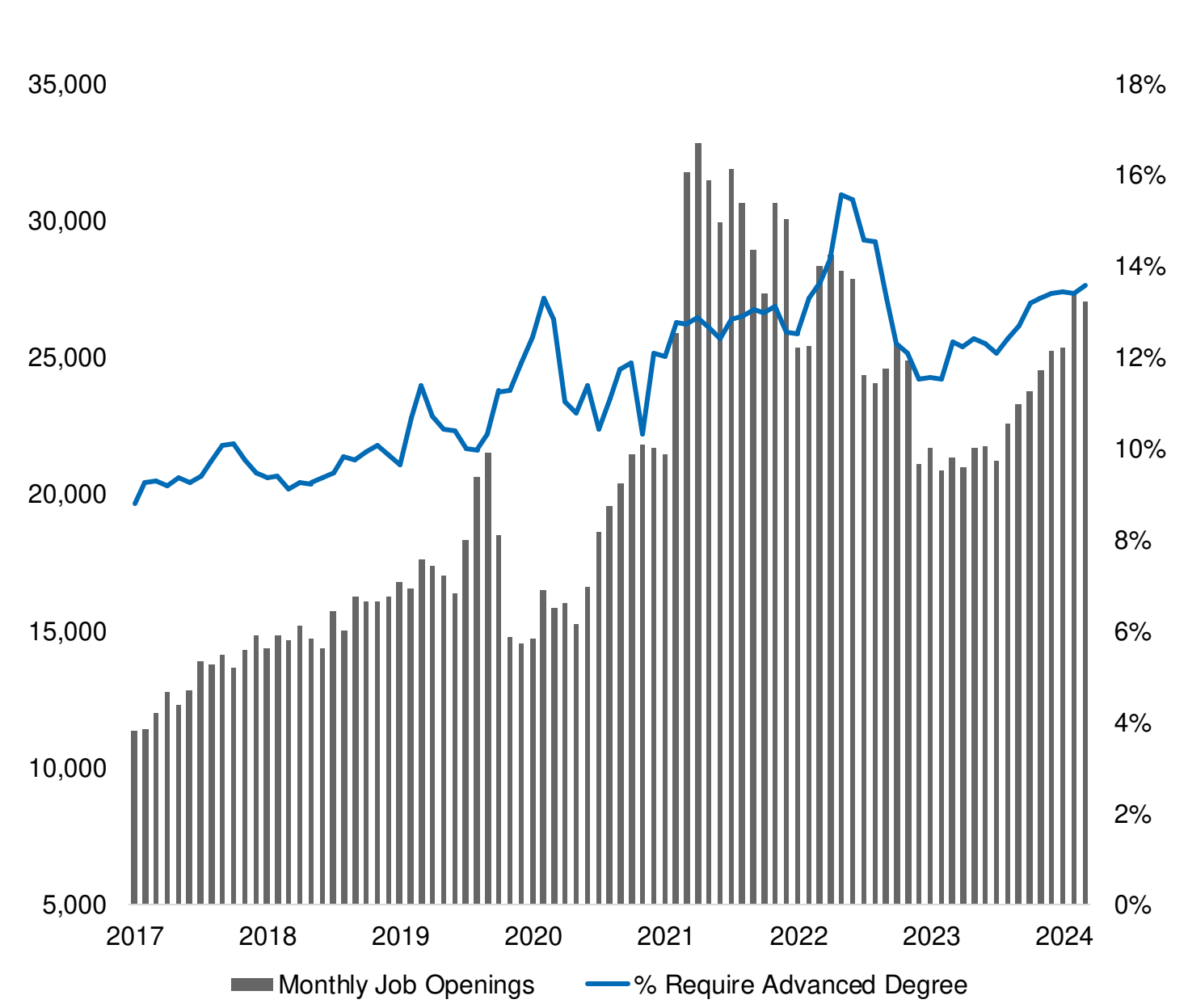
Despite persistent layoffs, biotech-related job openings increased over the last year and are now 21.6% above the 2023 trough. The share of jobs requiring an advanced degree continued to climb as well, reaching over 13.6% by the end of the third quarter of 2024. Wage growth is comparatively lower than recent history but is still trending in a positive direction. Labor market weakness could curtail further near-term gains.

1Q24 Ave. Annual Salaries	Biochemists	Biomedical Engineers	Chemists	Medical Scientists
<b>Boston</b>	\$130,900	\$117,400	\$123,000	\$130,000
<b>Bay Area</b>	\$139,400	\$132,400	\$126,000	\$145,400
<b>San Diego</b>	\$128,100	\$121,800	\$112,400	\$123,100
<b>U.S. Average</b>	\$117,800	\$109,700	\$98,200	\$114,800

## 1-Year Change in Average Annual Wages per Worker



## Biotech Job Openings



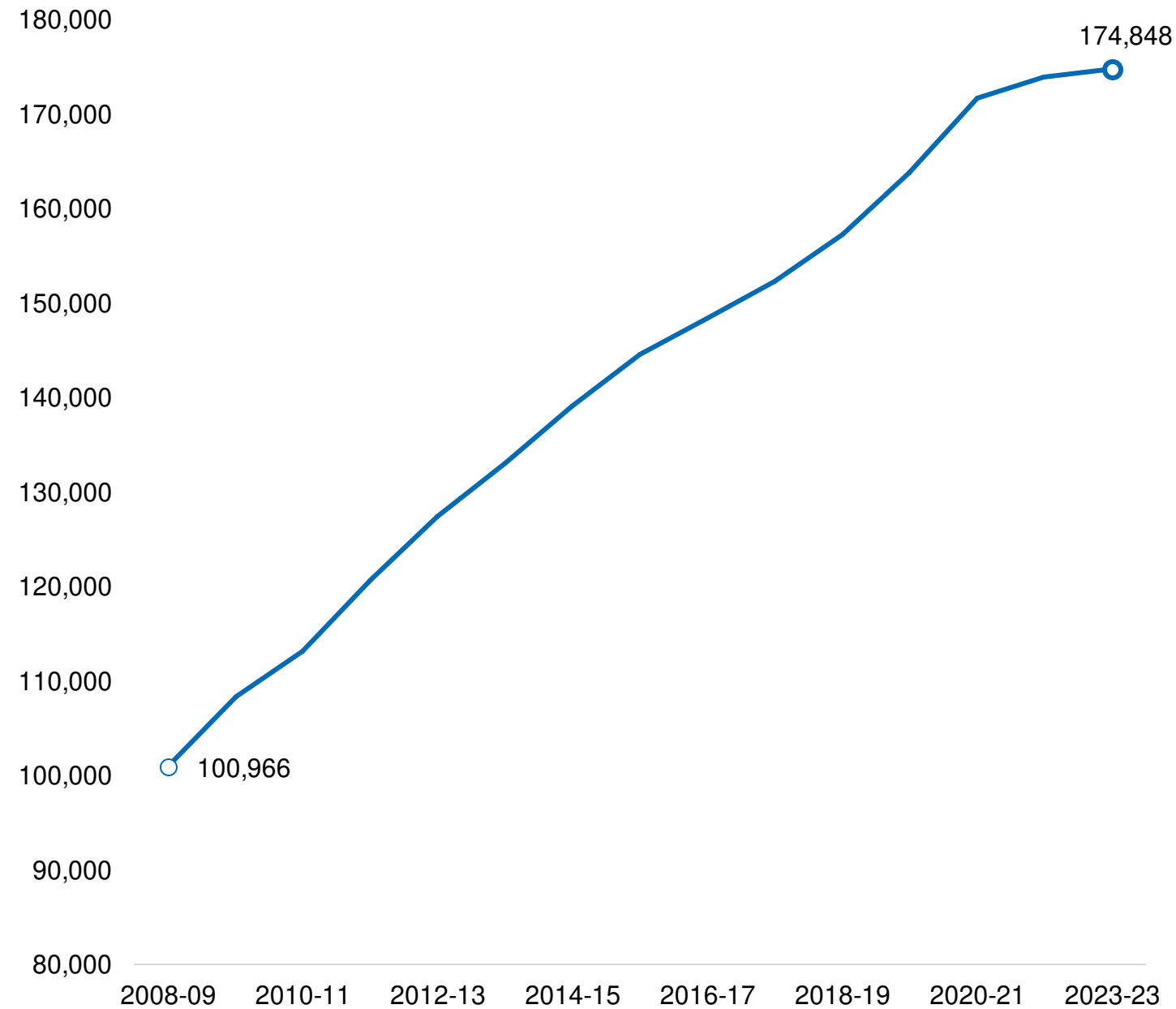
Source: JobsEQ, Newmark Research

As of September 2024

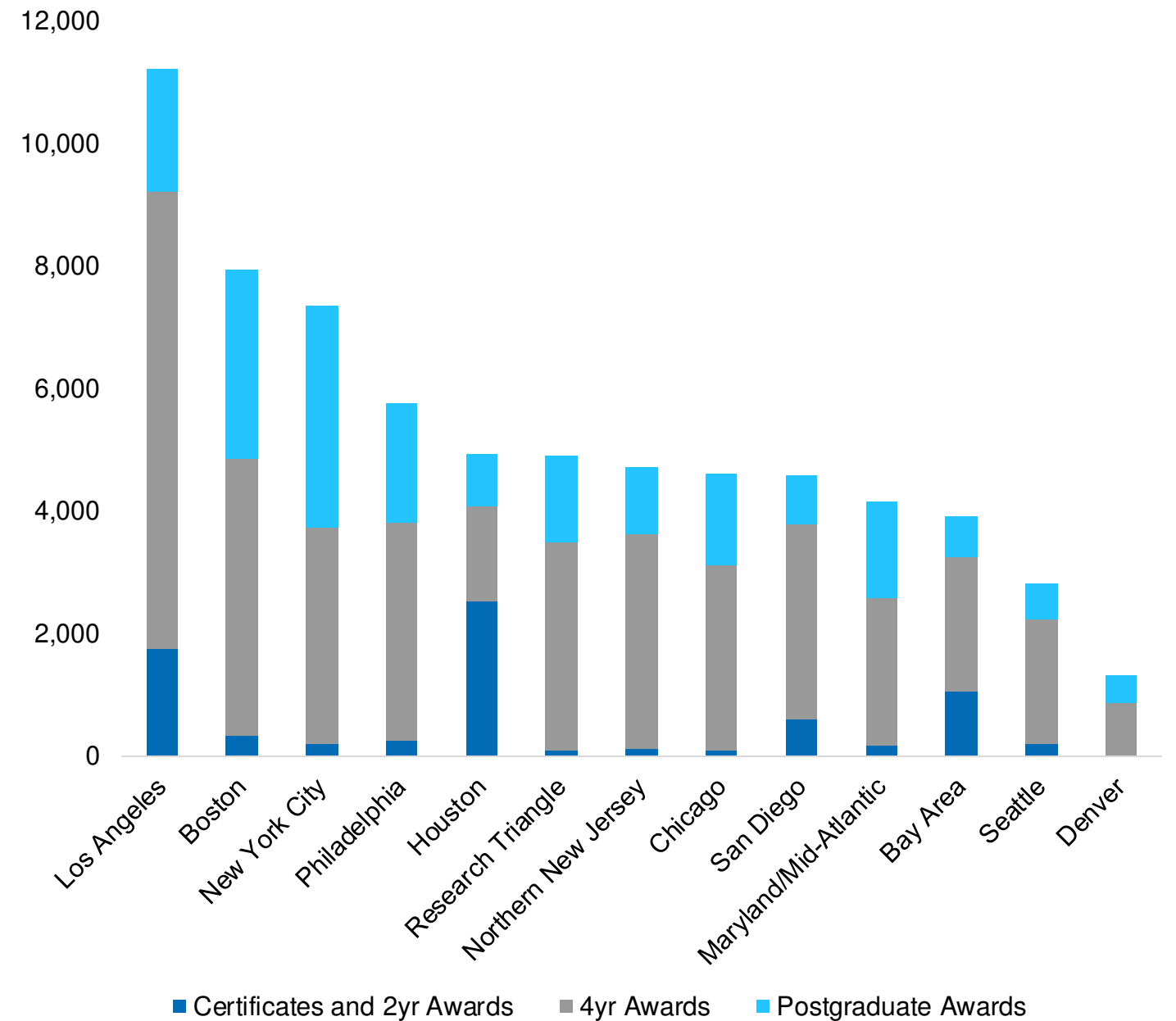
# Emerging Talent Remains Critical for Long-term Sector Growth

The number of biological and biomedical science degrees awarded each year continues to grow, increasing by 73.2% since 2008. The most life science-related degrees are being awarded in Los Angeles, Boston and New York City, closely aligning with significant tech transfer activity in these areas.

Biological and Biomedical Sciences Degrees Awarded



Life Science-Related Degrees Awarded by Metro



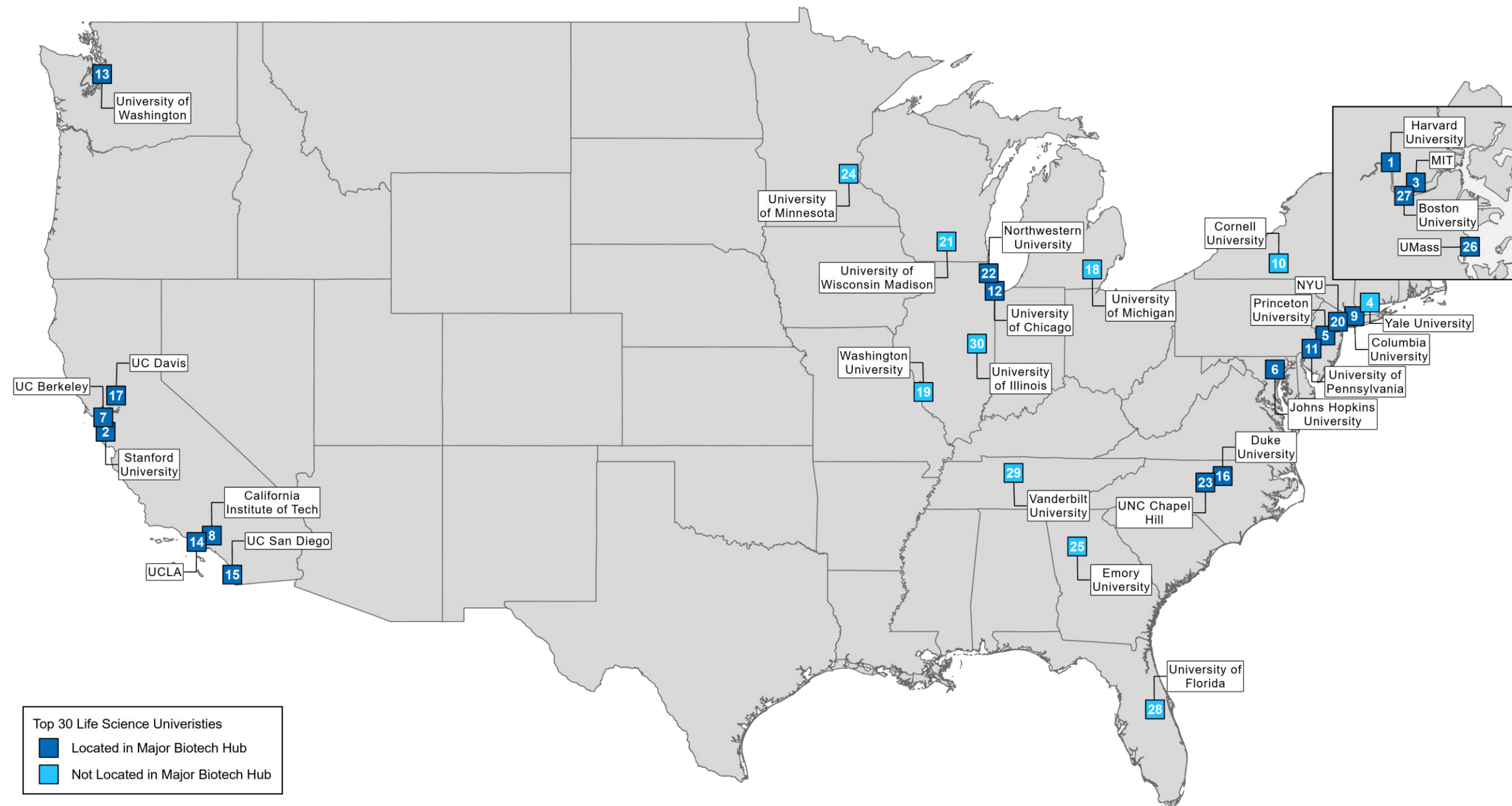
Source: JobsEQ, National Center for Education Statistics, Newmark Research

As of Q1 2024

# Colleges and Universities Support the Talent Pipeline

The concentration of top educational institutions is vital to the life science ecosystem. To maintain a steady pipeline of qualified employees, leading markets for life science are also home to many colleges and universities that produce the most life science degrees. Notably, 20 out of the 30 top schools for life science degrees are located in major biotech hubs.

## Top 30 Universities for Life Science Degrees



Source: Times Higher Education 2024 Rankings, Newmark Research

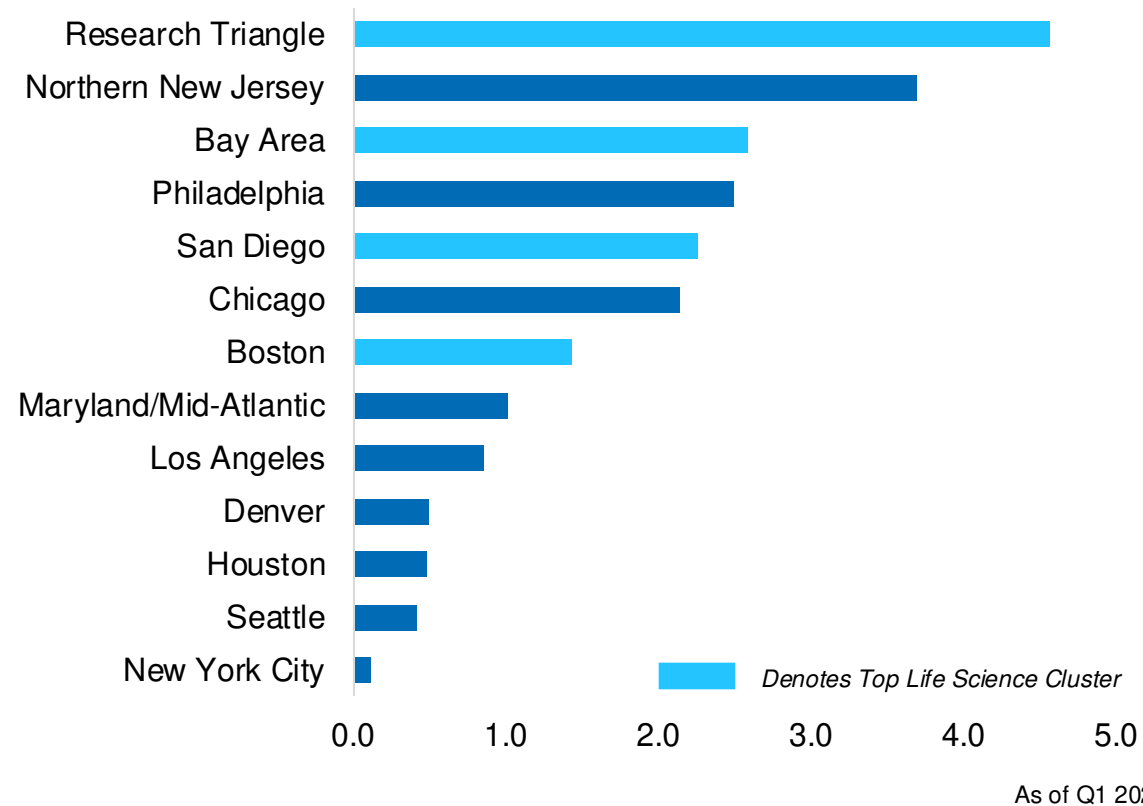
# Despite Current Job Losses, the Outlook for Biomanufacturing is Positive

A resurgence in domestic drug manufacturing has pushed employment in this sector to a 30-year high. While Northern New Jersey has the highest number of jobs, the Research Triangle holds the highest concentration of jobs among the top life science markets. Across the U.S., biomanufacturing employment peaked in May of 2023 and ended August 2024 1.9% below that high point. Prospects for growth remain positive due to recent investments in the onshoring and nearshoring of advanced manufacturing facilities in North America.

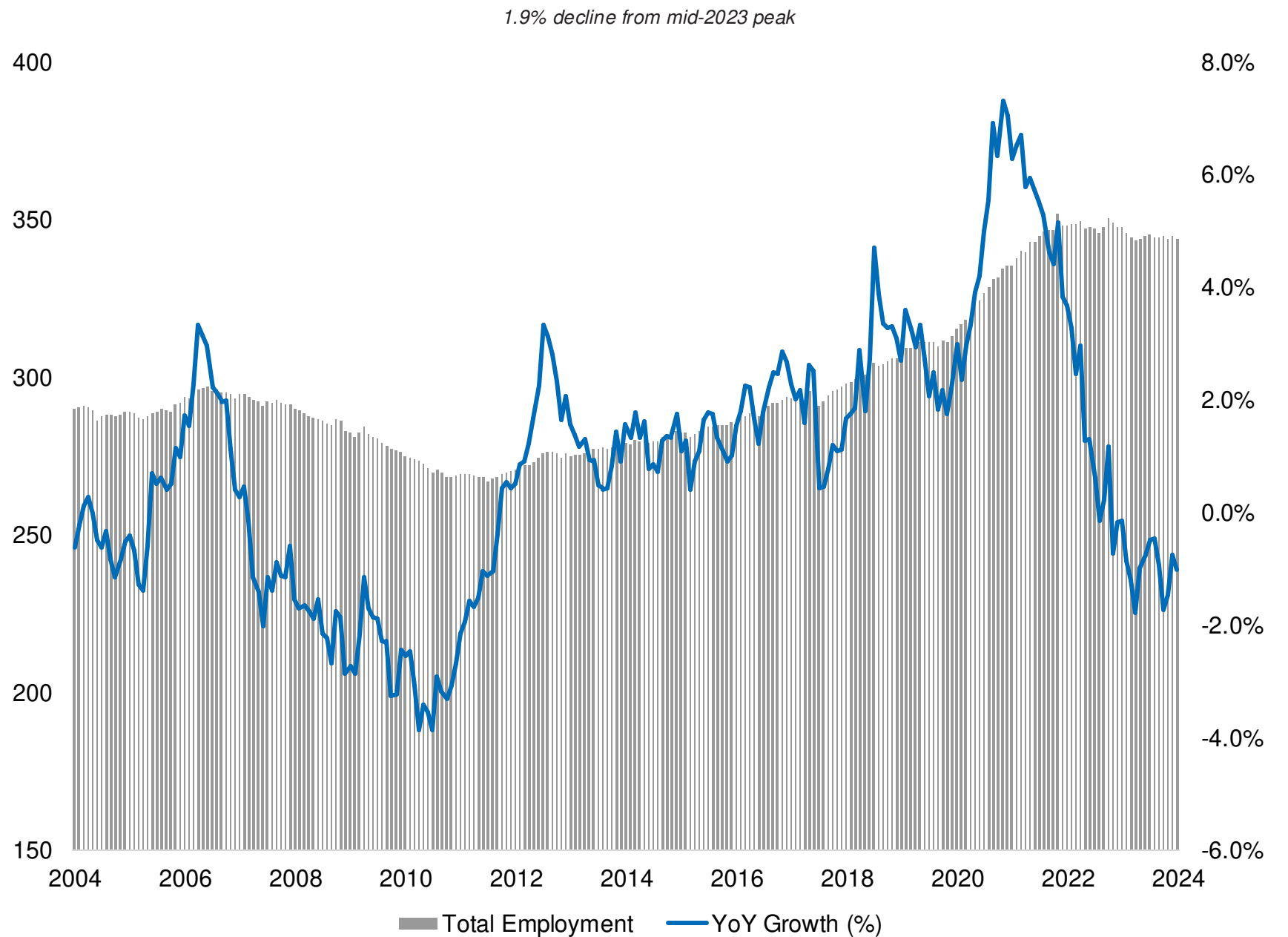
## 1Q24 Pharmaceutical and Medicine Manufacturing Employment

Northern New Jersey	27,438
Chicago	20,891
Philadelphia	15,992
San Francisco	14,149
Los Angeles	11,920

## Pharmaceutical and Medicine Manufacturing Location Quotients



## Historical Pharmaceutical and Medicine Manufacturing Employment



Source: JobsEQ, Moody's, BLS, Newmark Research

As of August 2024

# Market Fundamentals

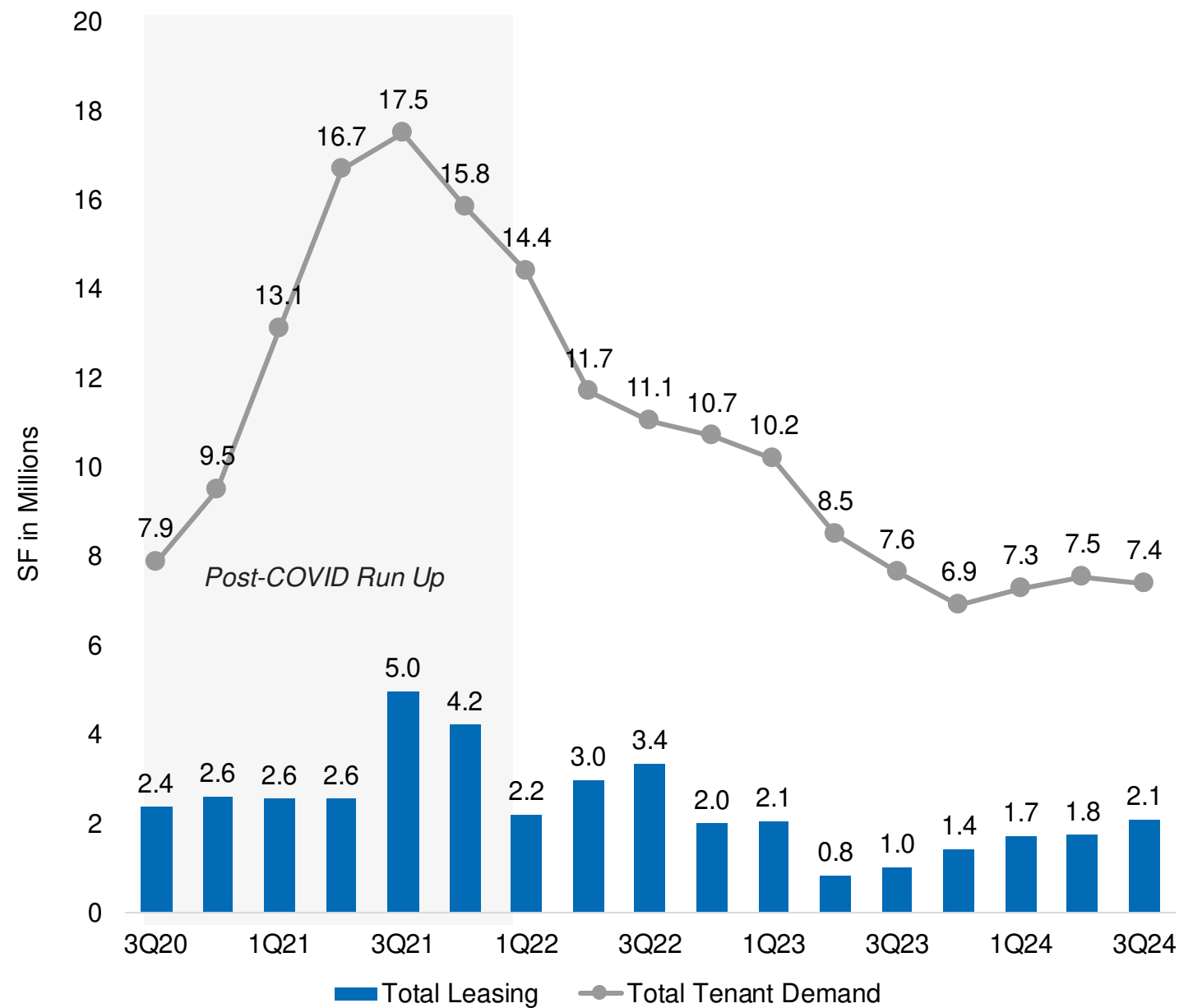




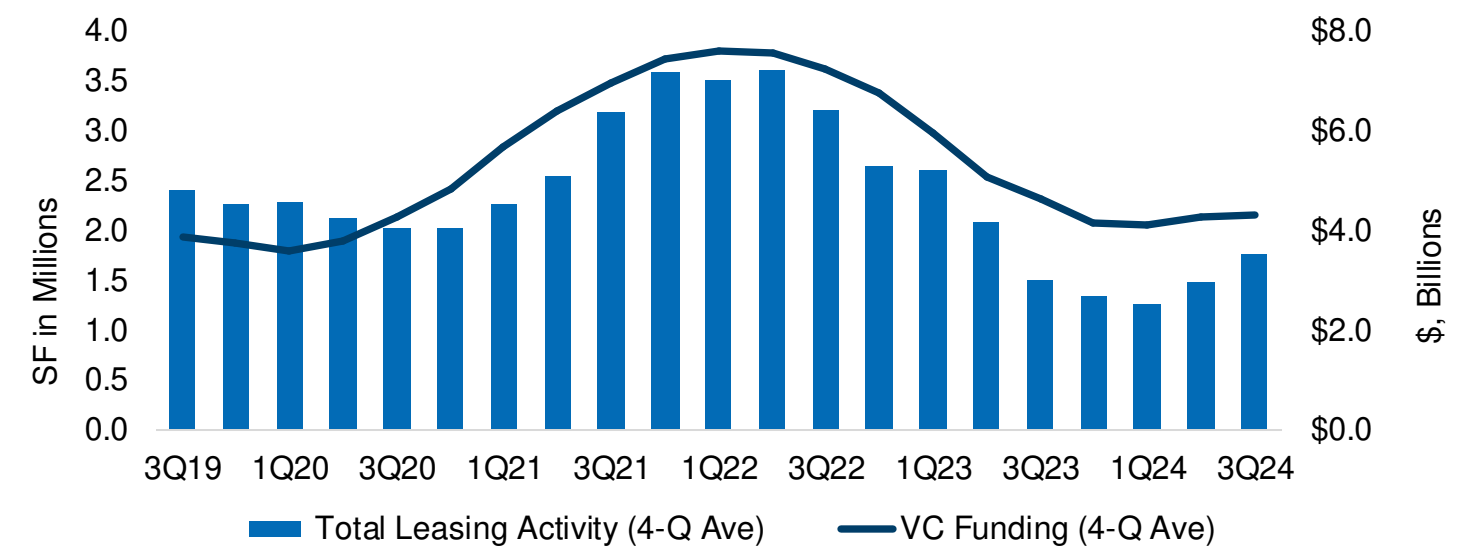
# Demand-Side Fundamentals Have Likely Bottomed

Active tenant requirements ended the third quarter of 2024 slightly below mid-year totals, while leasing velocity reached a 6-quarter high across four of the top life science clusters. Total requirements are 6.9% above year-end 2023 levels, and as a result, leasing volumes are beginning to show signs of growth. However, velocity remains well below the 2021 peak, with renewals and extensions dominating.

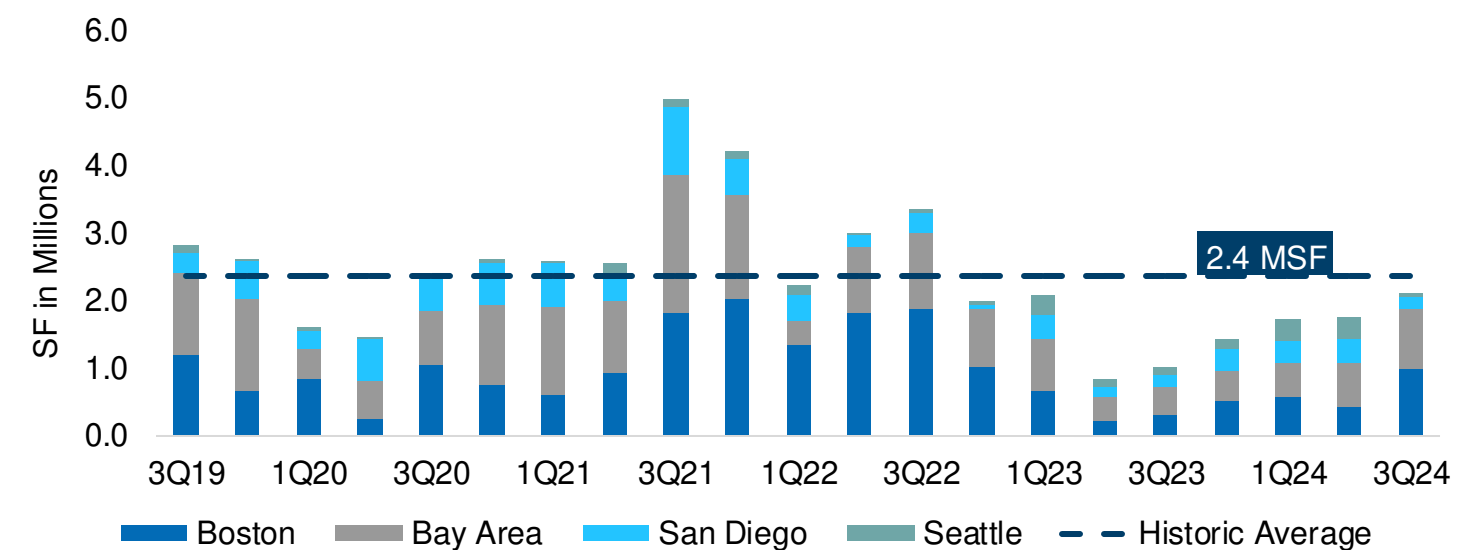
### Historical Active Tenants in the Market and Leasing Activity



### Historical Venture Capital Funding and Leasing Activity



### Historical Leasing Activity by Market

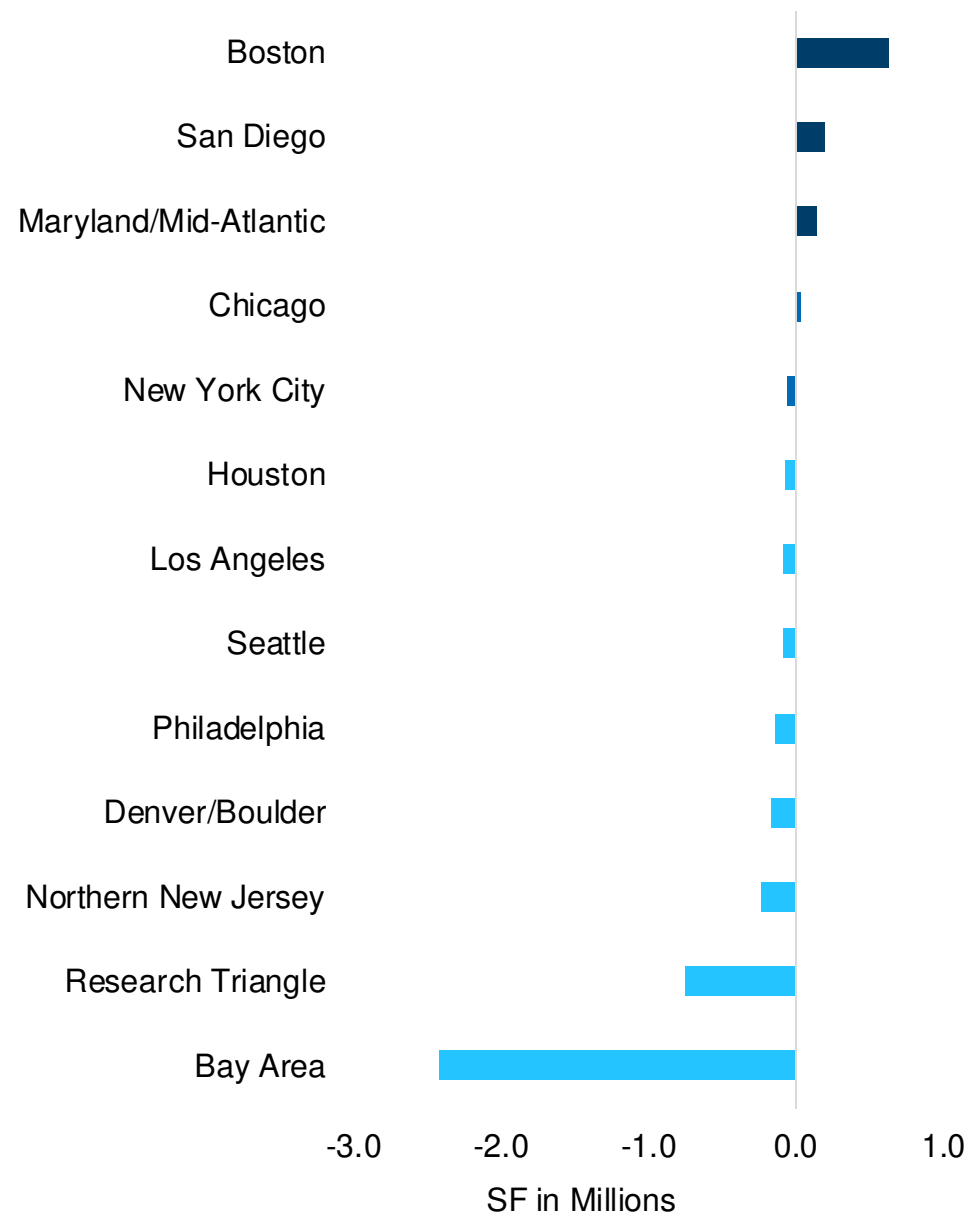


Source: Newmark Research  
 Note: Data inclusive of Boston, Bay Area, San Diego and Seattle only. The Bay Area tenant demand data only includes the Peninsula since 2021.

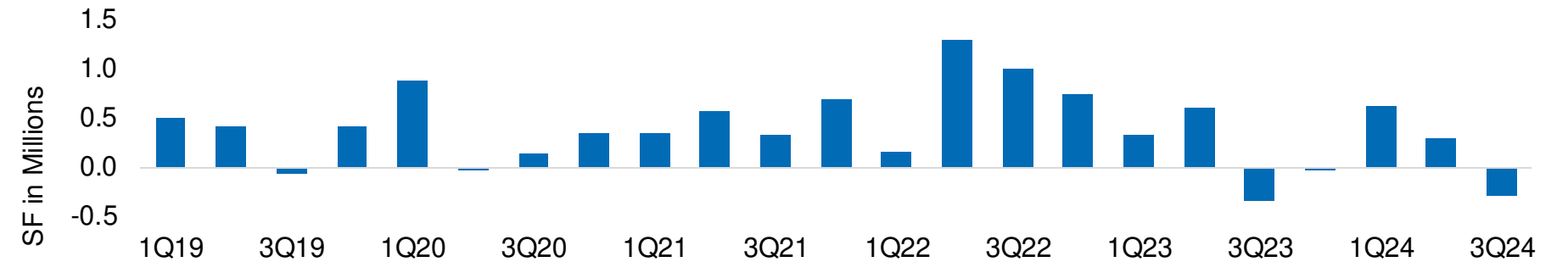
# Net Absorption Remains Negative Across the U.S.

Only four of the top 13 U.S. life science markets posted positive net absorption through three quarters of 2024, with pre-leasing in new construction driving most gains in Boston and San Diego. The Bay Area continues to post the largest occupancy losses, totaling almost 2.5 million SF through the first three quarters of 2024.

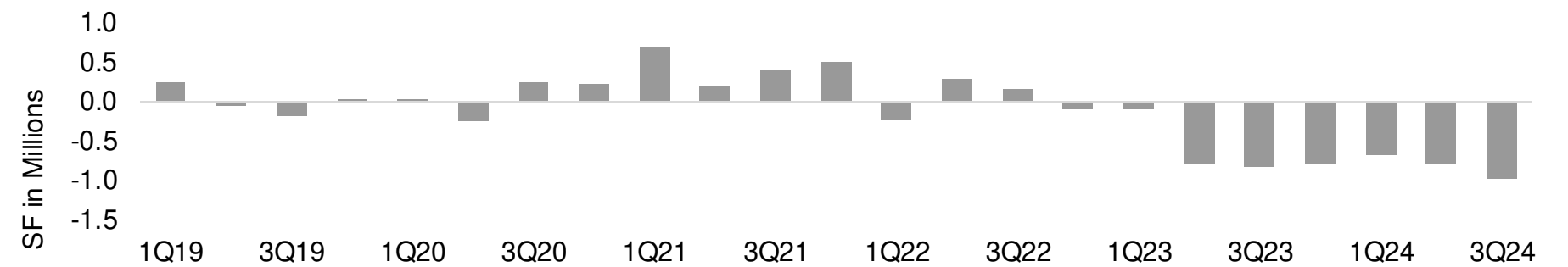
2024 YTD Net Absorption by Market



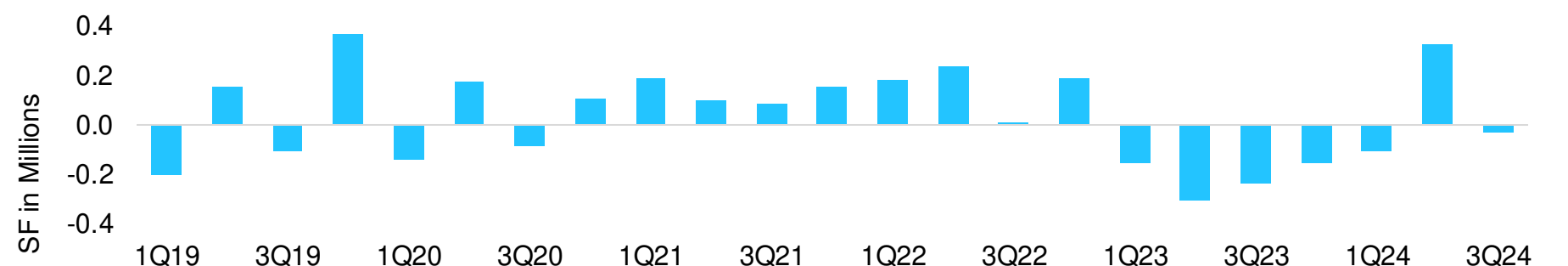
Historical Net Absorption | Boston



Historical Net Absorption | Bay Area



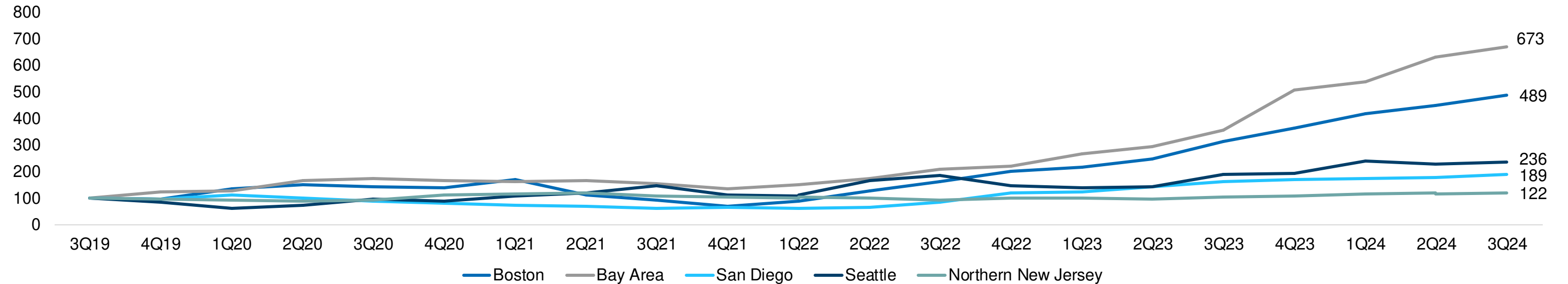
Historical Net Absorption | San Diego



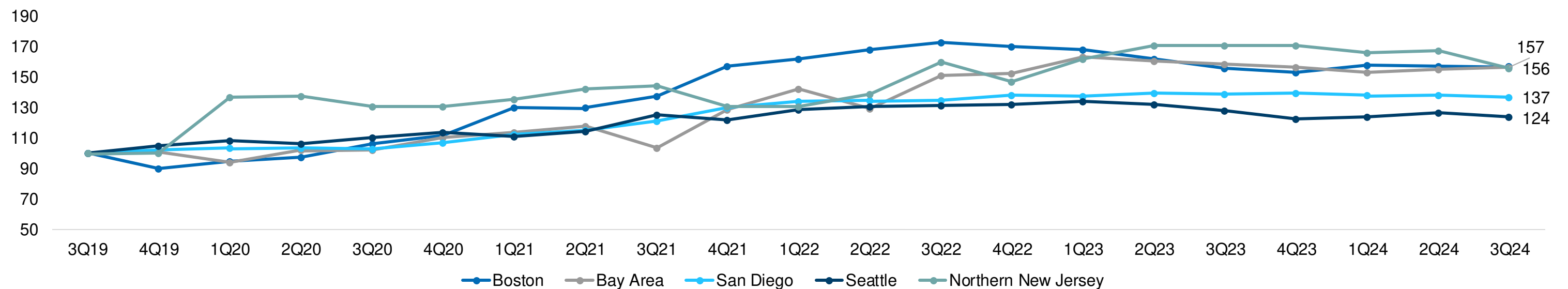
# Fundamentals Are More Favorable in Select Markets

Boston and the Bay Area experienced the most significant increase in laboratory availabilities in the last five years, continuing to report new record highs each quarter. Asking rents have yet to correct materially in most clusters, but lease rates are off modestly in several markets.

Availability Rate Indexed to 3Q19



Laboratory Asking Rents (\$/SF) Indexed to 3Q19



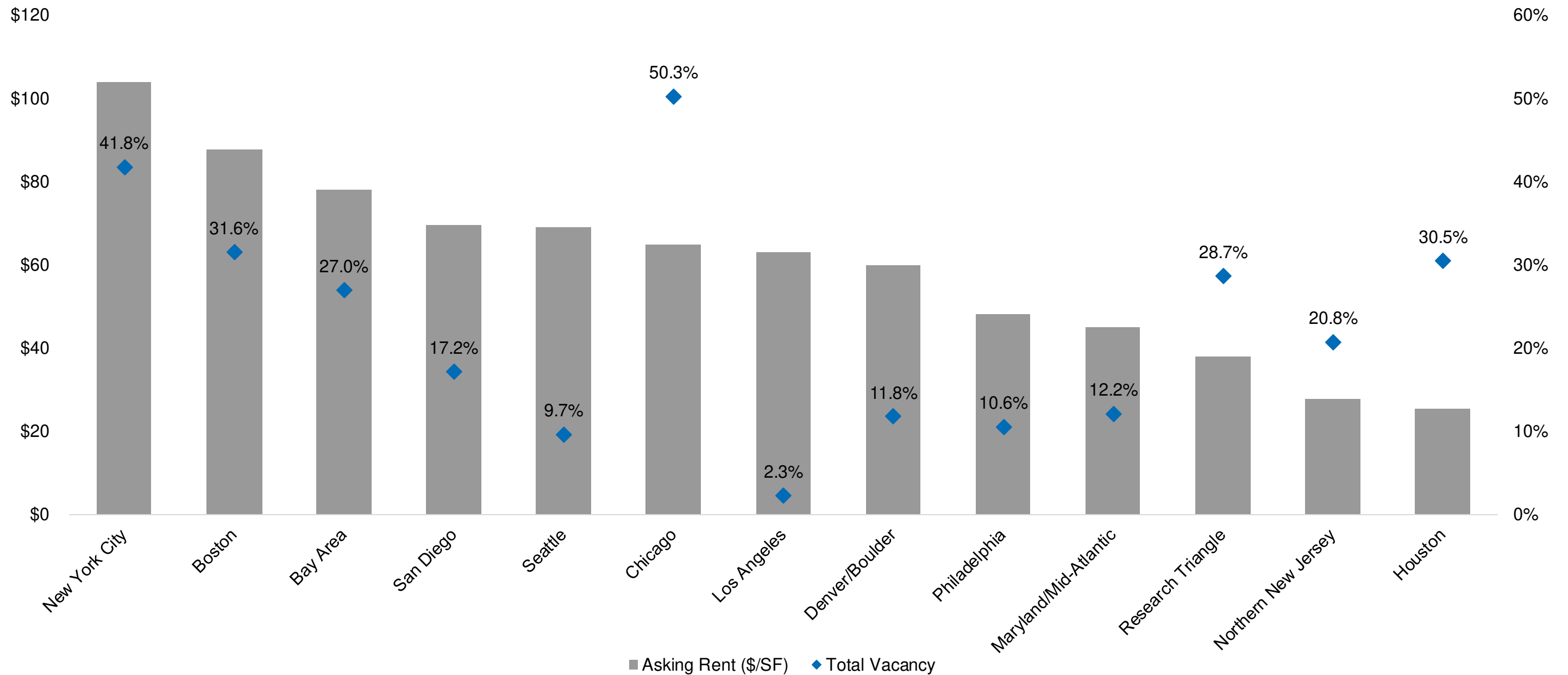
Source: Newmark Research

As of Q3 2024

# Few Markets Maintain Single-Digit Vacancy Rates

As of the third quarter of 2024, only two key life science clusters maintained a sub-10% vacancy rate. There were also only three markets that saw a declining vacancy rate in the third quarter—Seattle, Denver/Boulder, and Philadelphia. Moreover, only Denver/Boulder saw that rate decrease by over 10 basis points. While softening fundamentals have also led to lower asking rents overall, premium pricing on new construction is keeping lease rates elevated in select locations.

3Q2024 Vacancy Rate and Average Asking Rent by Market



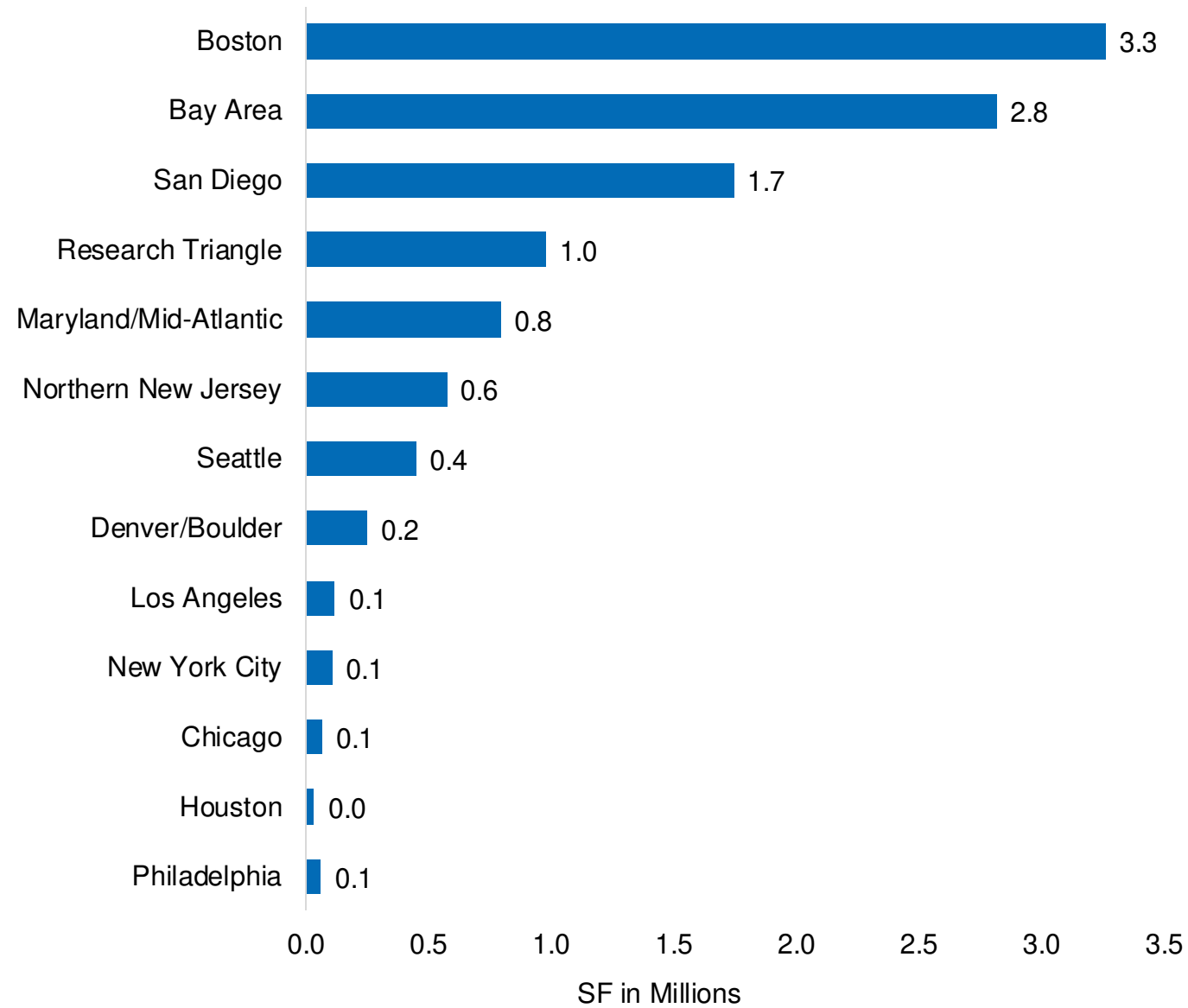
Source: Newmark Research

As of Q3 2024

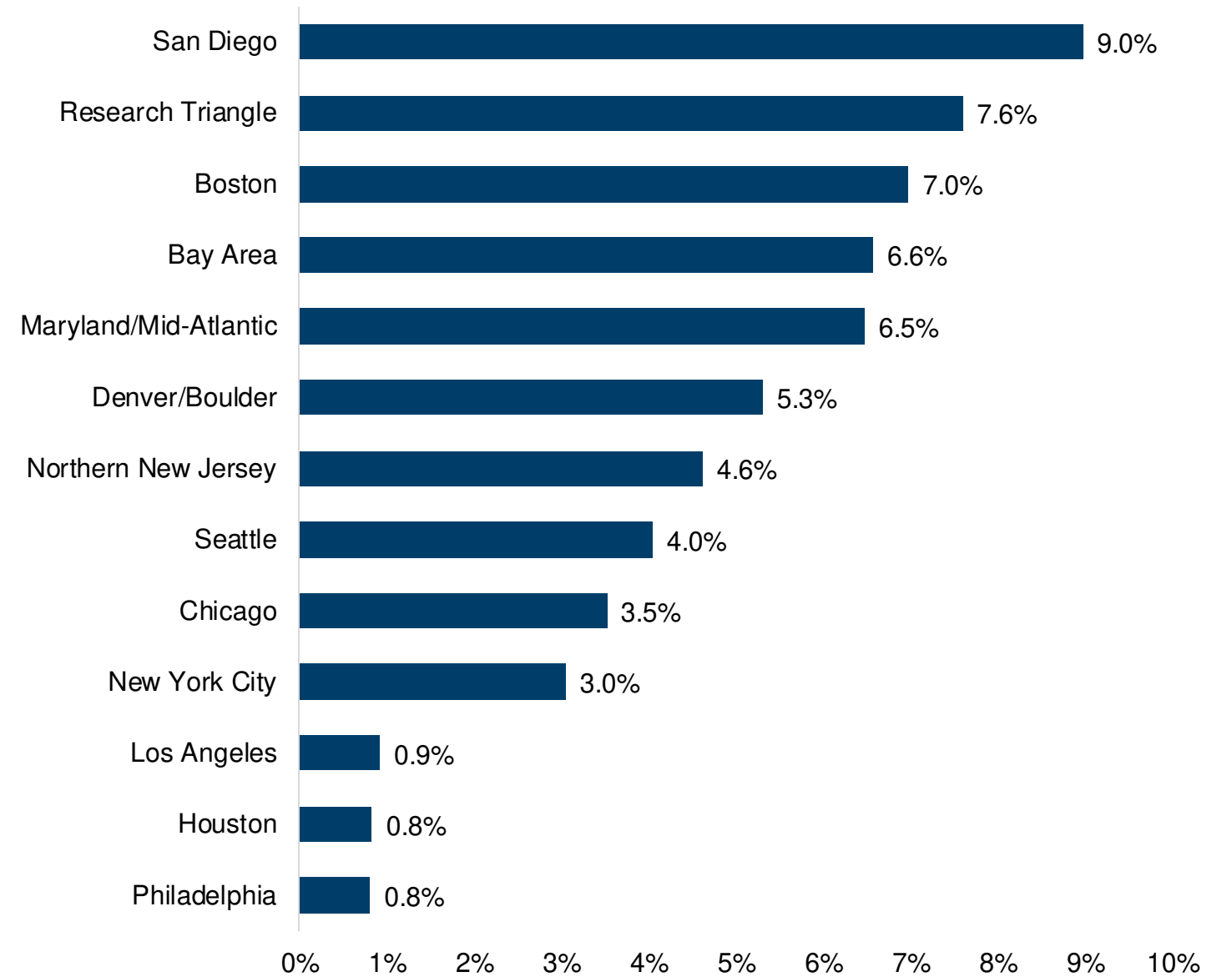
# Cash Preservation Measures Led to Increase in Sublet Offerings

Sublease inventory continues to grow, as 1.5 million SF was added nationally in the third quarter of 2024, which brings the total to 11.2 million SF available for sublease. The three top clusters of Boston, Bay Area, and San Diego, alongside the Research Triangle, lead the way in sublease availability rate, as occupiers have more built-out laboratory space than any point in history to choose from.

SF of Available Sublease Space by Market



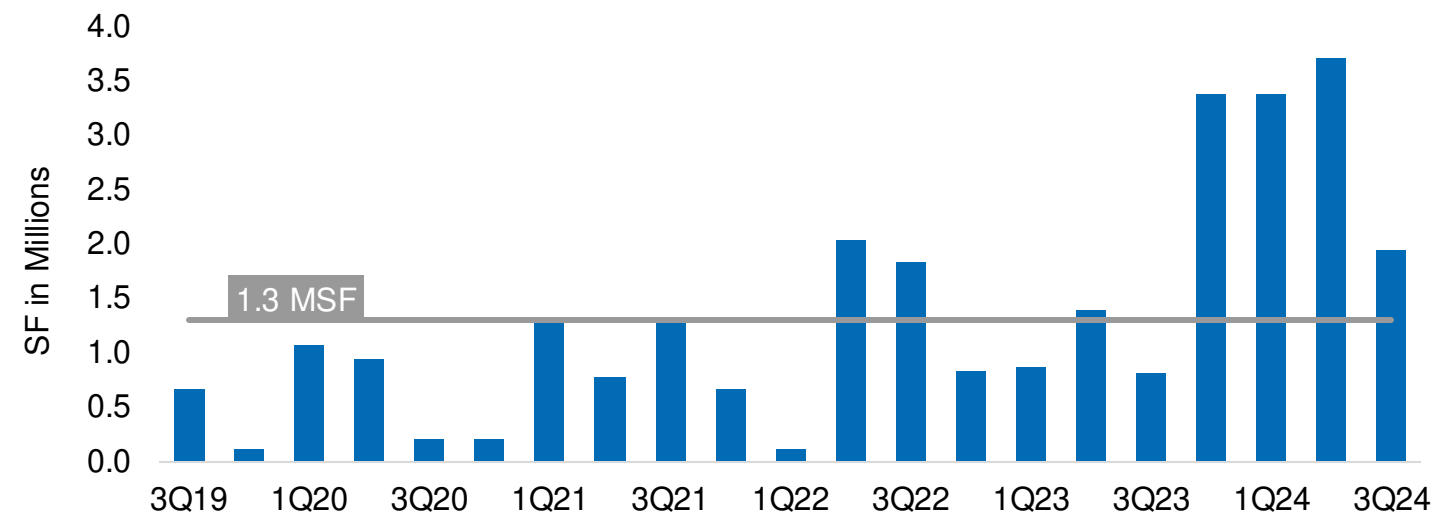
Sublease Availability Rates by Market



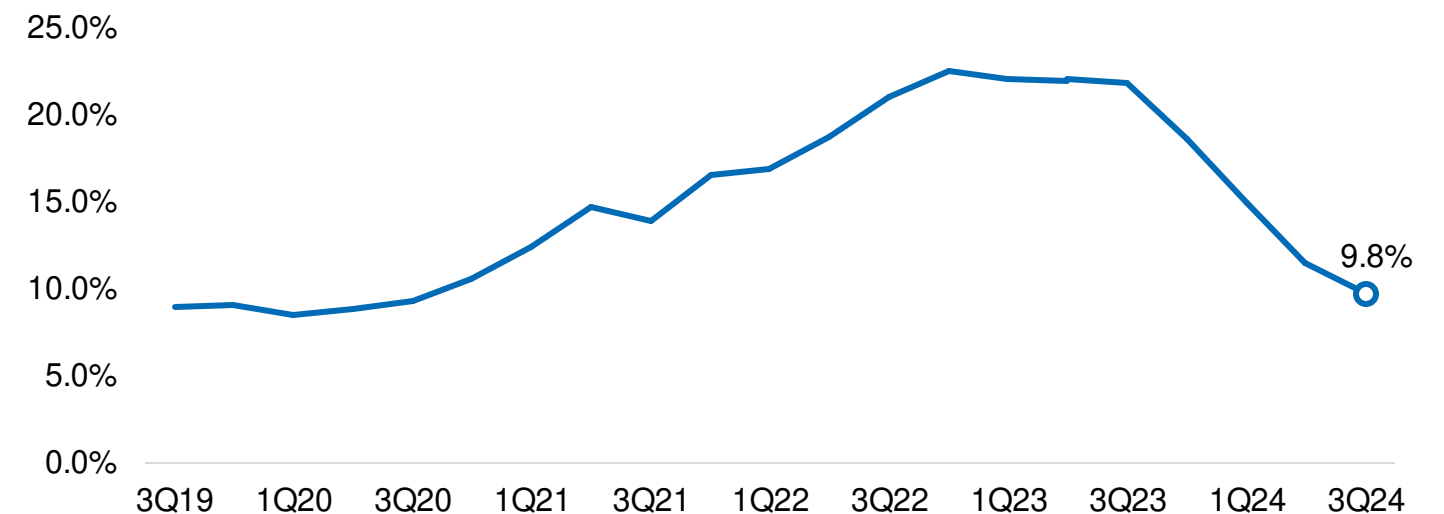
# Deliveries Wane from Record Highs, But Remain Above Historic Levels

Following three consecutive quarters with over three million SF delivered in four of the top U.S. life science clusters, only 1.9 million SF delivered in the third quarter of 2024. Despite this sharp decline, recent deliveries are still above the 5-year historical average. Future development remains clustered in just a handful of key markets; however, that share has decreased from mid-year 2024 as projects have delivered and developers consider secondary regions.

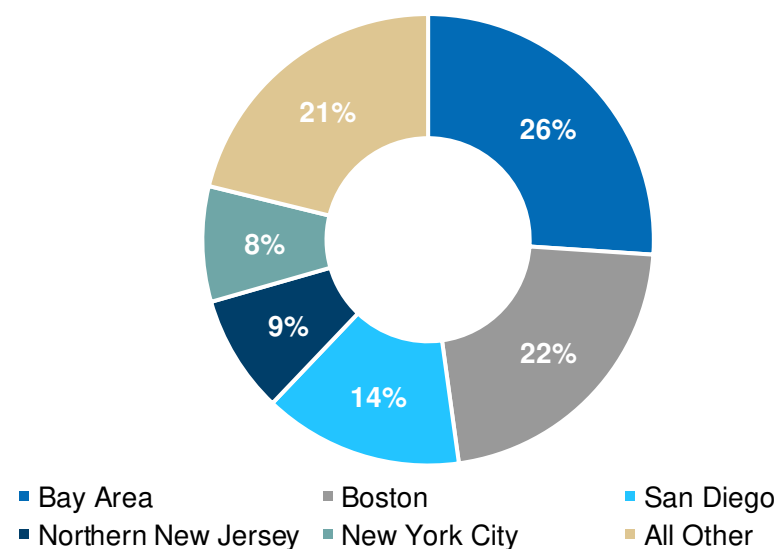
SF of Purpose-Built Laboratory Space Delivered\*



SF Under Construction a % of Existing Laboratory Inventory\*



Share of SF Under Construction



Key Laboratory Developments



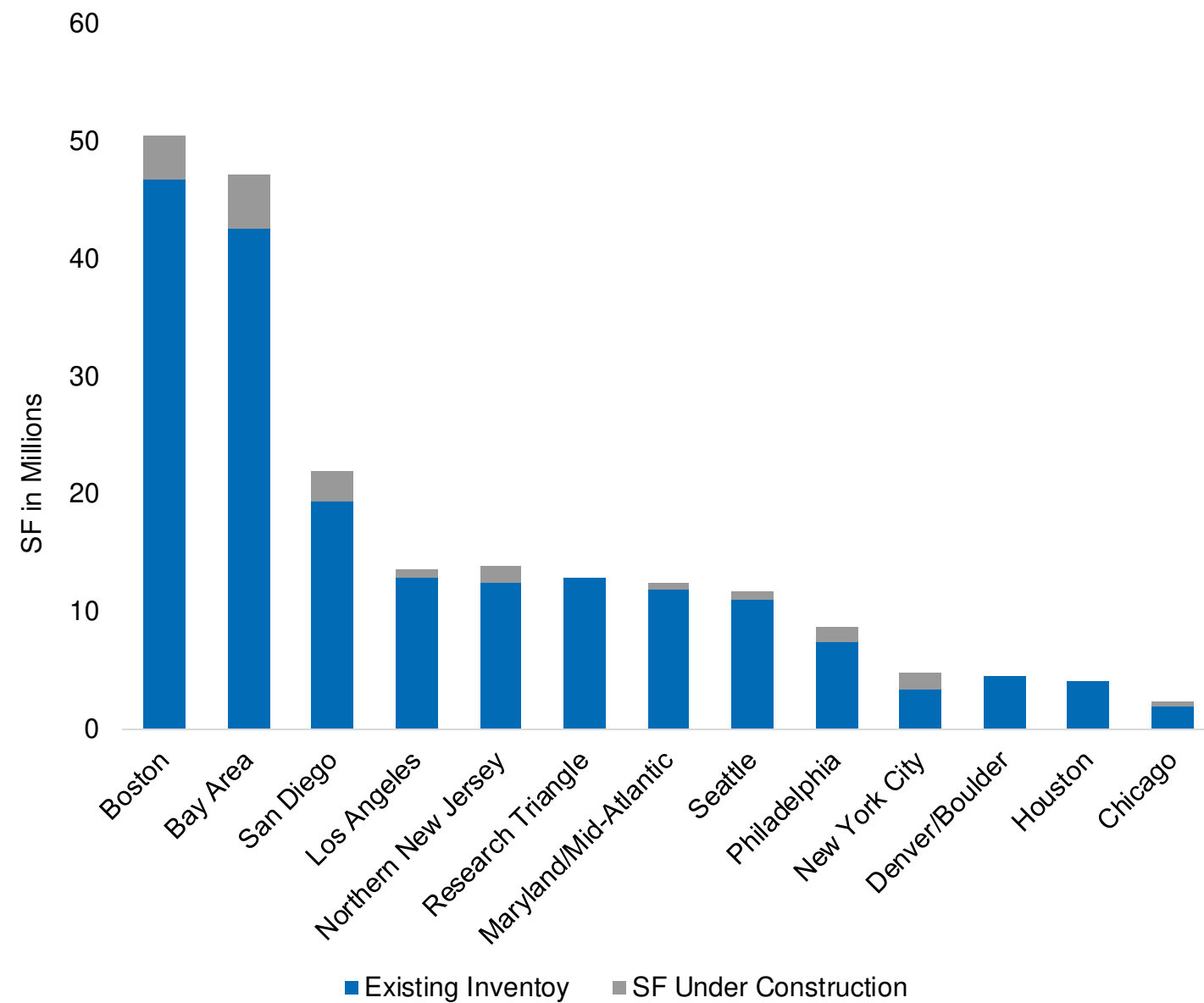
585 Third Street	One Milestone	ELCO Yards	The Landing	Pacific Center
East Cambridge	Boston Urban Edge	Redwood City	Burlingame	Sorrento Mesa
605,000 SF	440,000 SF	670,578 SF	503,500 SF	496,000 SF
BioMed Realty	Breakthrough Properties / Tishman Speyer	IQHQ	King Street Properties / Helios Real Estate	Sterling Bay
2025	2026	2025	2025	2025

Source: Newmark Research  
\*Only includes Boston, Bay Area, San Diego, and Seattle

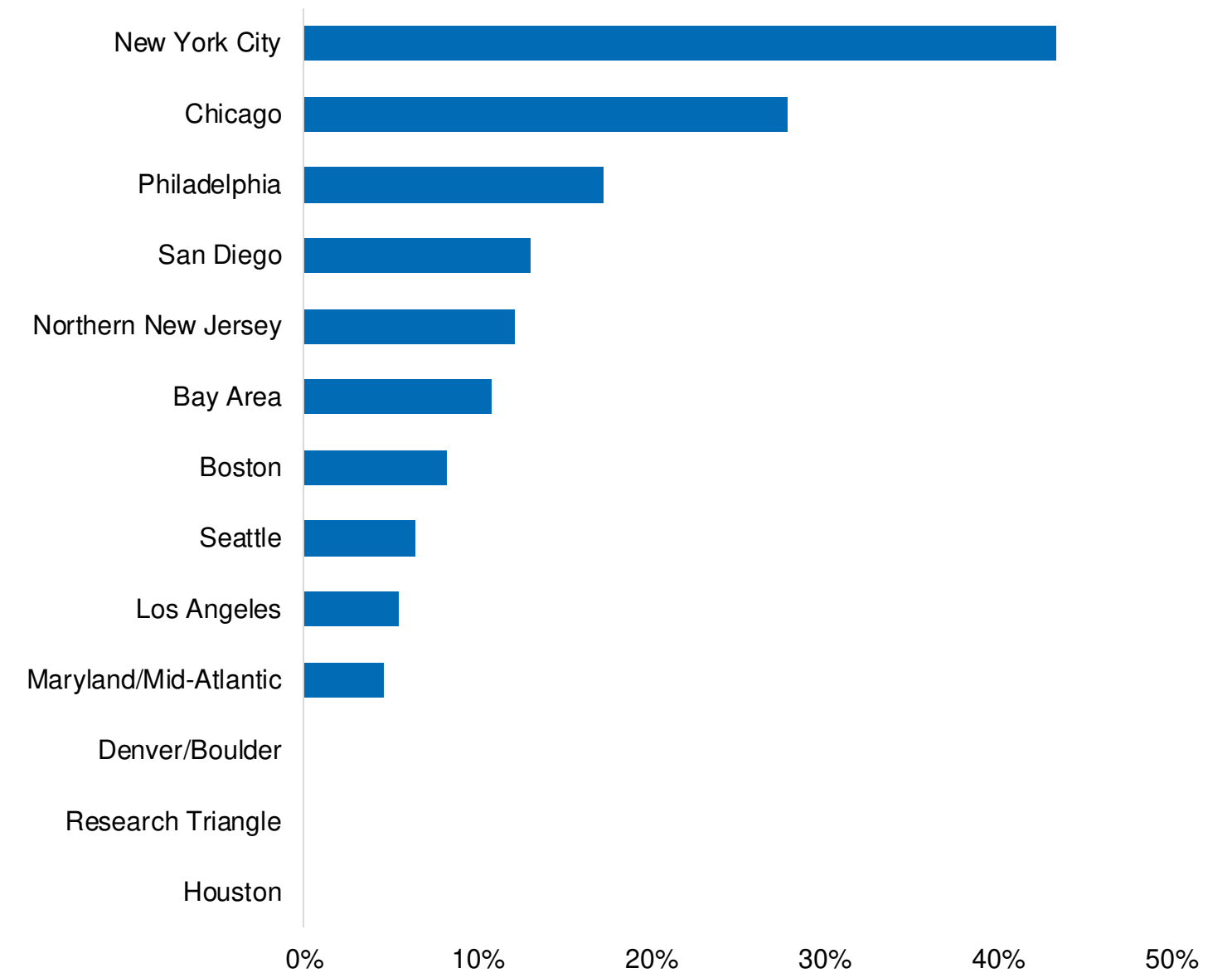
# Established Clusters Continue to Lead Development

Despite three consecutive quarters of deliveries outpacing the 5-year historical average, development has slowed down across the board. The share of life science buildings under construction is concentrated in the top three clusters-Boston, Bay Area, and San Diego, which command about 62% of the SF currently under development. However, when accounting for the existing laboratory inventory, secondary regions such as New York City, Chicago, and Philadelphia lead the way.

Existing Inventory and SF of Purpose-Built Space Under Construction

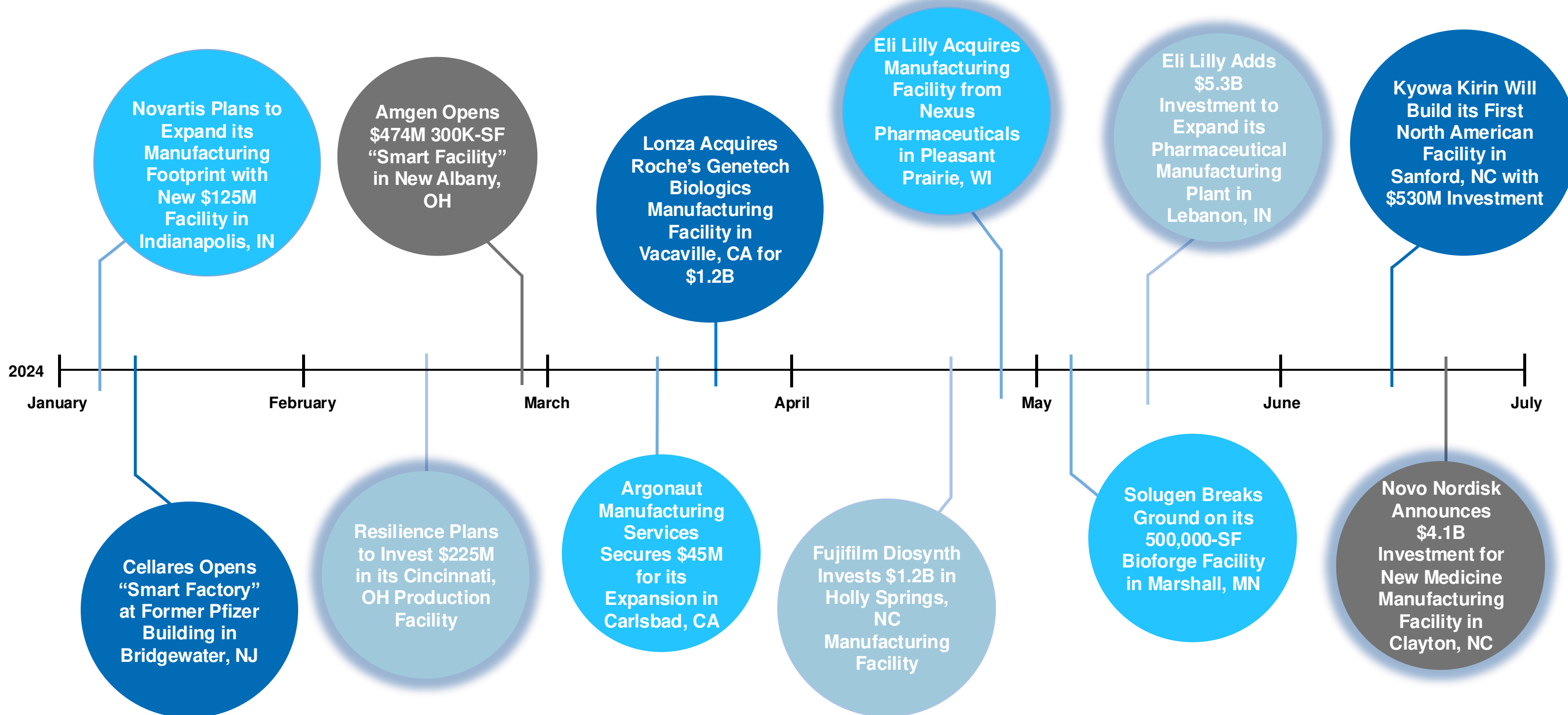


SF Under Construction a % of Existing Laboratory Inventory



# New Biomanufacturing Facilities and Expansions Announced Recently

Several major biotech companies, fueled in part by the growing use of GLP-1 drugs, have made substantial investments in new manufacturing facilities across the U.S.



Source: Newmark Research  
Shadow Indicates manufacturing facilities that will support GLP-1 manufacturing capacity



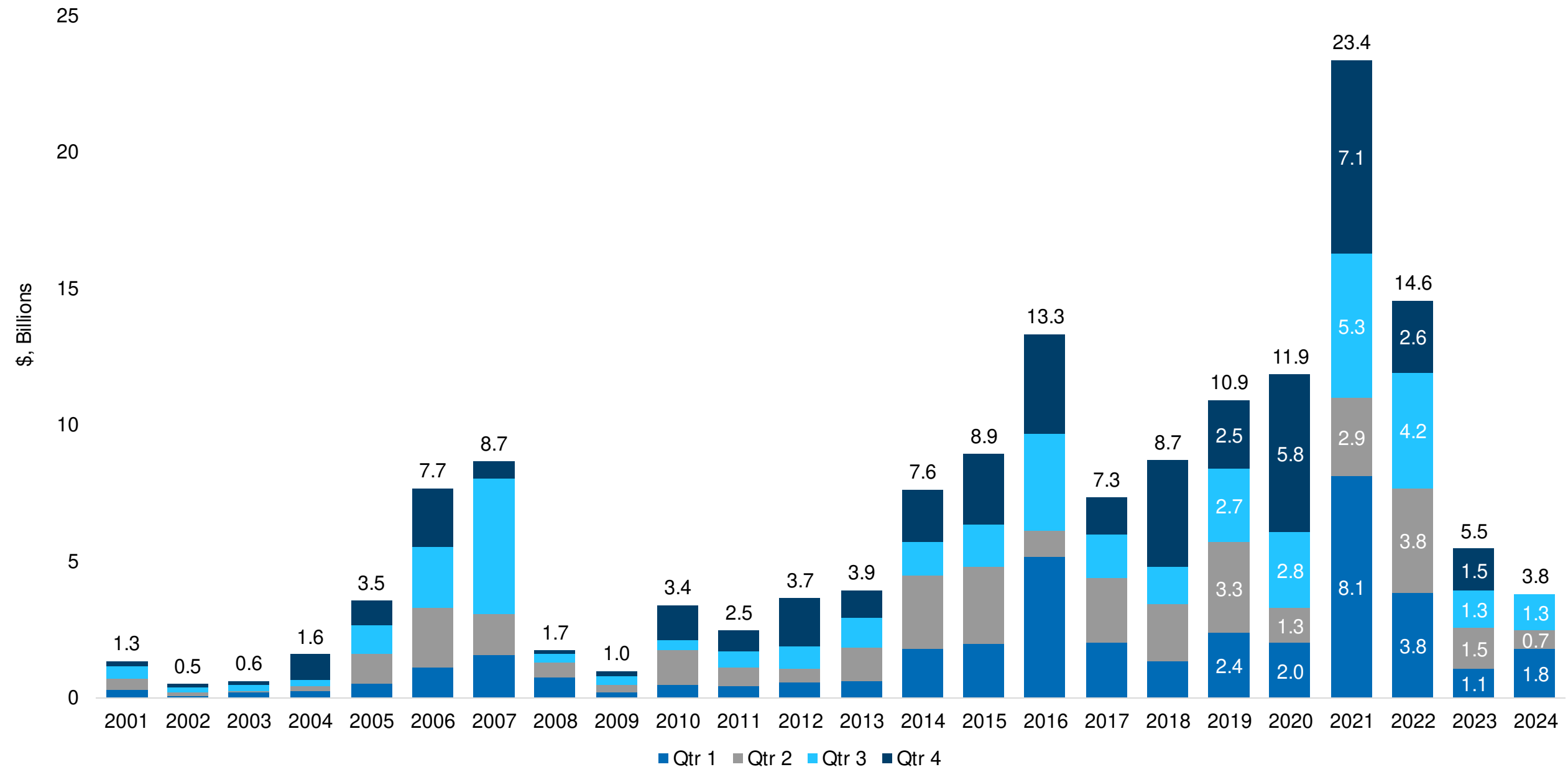
# Capital Markets



# R&D\* Investment Sales Remained Muted in the First Half of 2024

R&D transaction activity has totaled \$3.8B so far in 2024, down 3% year-over-year. Sales continue to run materially below their pre-pandemic pace; activity was down 41% compared to the 2017-to-2019 average. Cost of capital continues to be a concern, but this is shared by all property segments. More to the point, life science markets continue to work through absorption of both new purpose-built buildings as well as conversions. Investor appetite will begin to recover as prospects for NOI growth improve.

## R&D Investment Sales

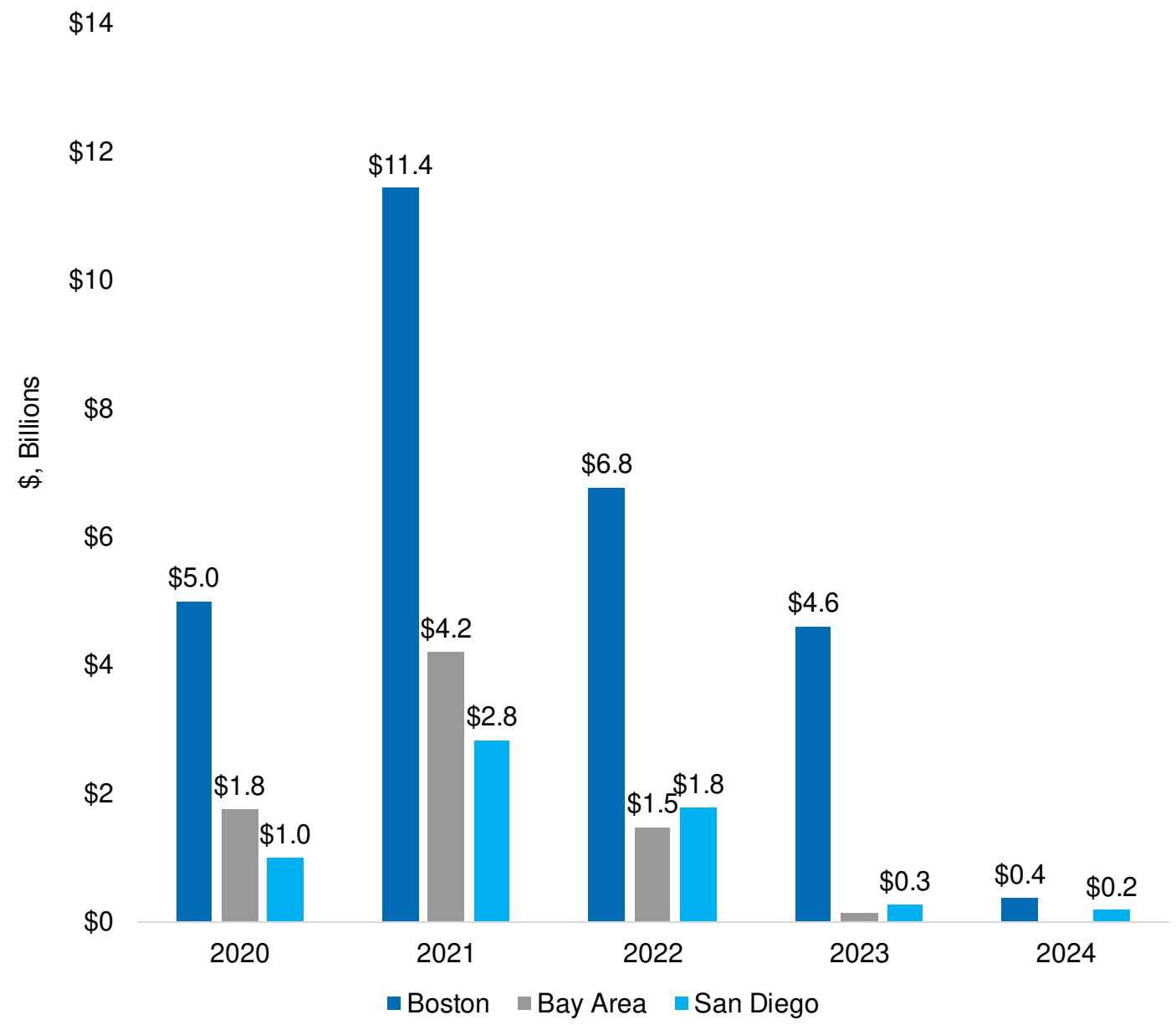


Source: RCA, Newmark Research as of 10/23/2024  
 \*R&D property subtype is a proxy for Life Science

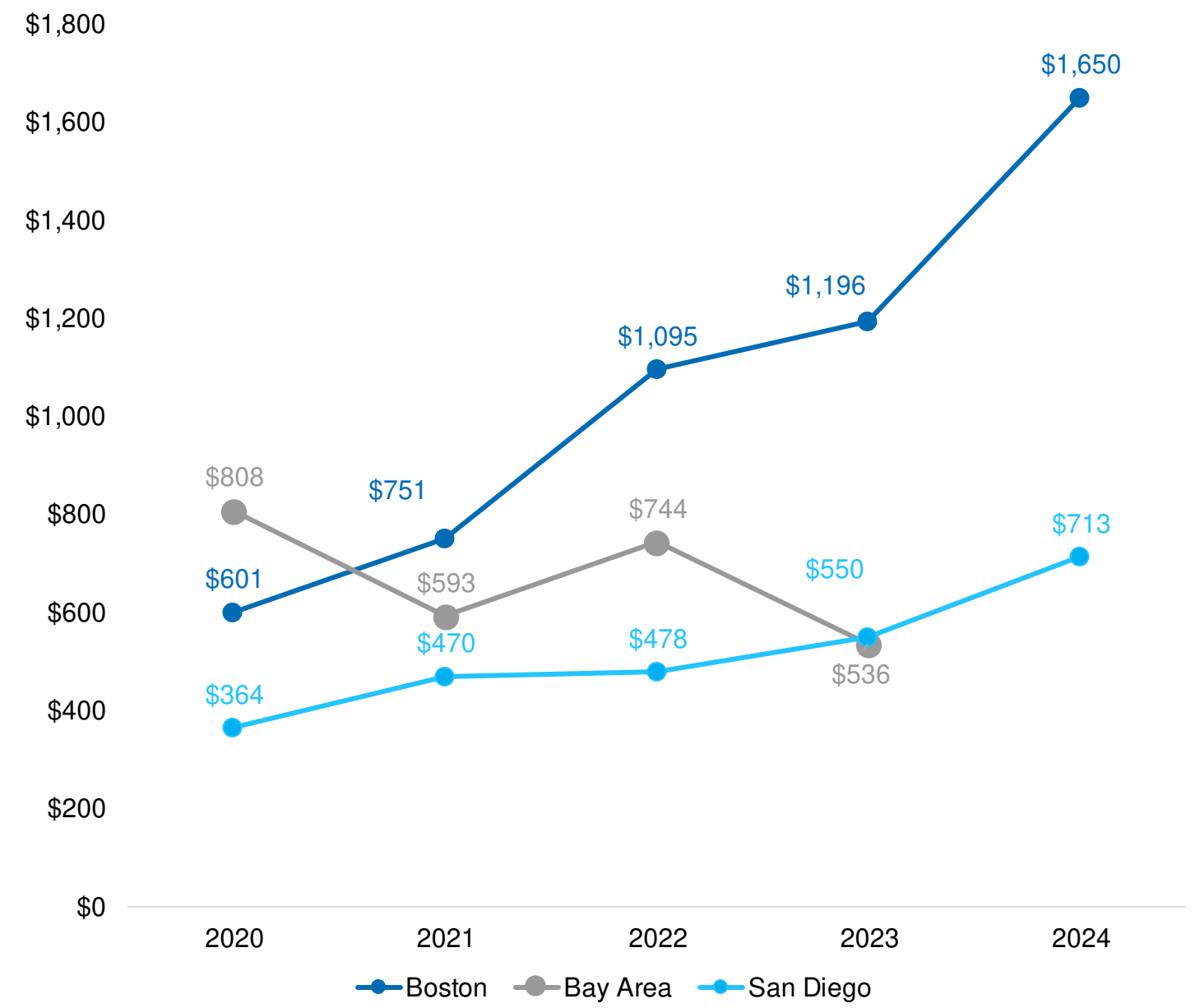
# Transactions Are Limited, But Liquidity Will Likely Improve

According to proprietary analysis from Newmark, \$41.7 billion in life science-related assets changed hands in the nation's top three biotech hubs from 2020 through the third quarter of 2024, with 2021 marking the height of activity. Pricing is holding for well-leased core assets with credit tenants, and users are increasingly considering owner-user options.

Total Life Science-Related Investment Sales: Top 3 Markets



\$/SF of Life Science Sale Transactions: Top 3 Markets



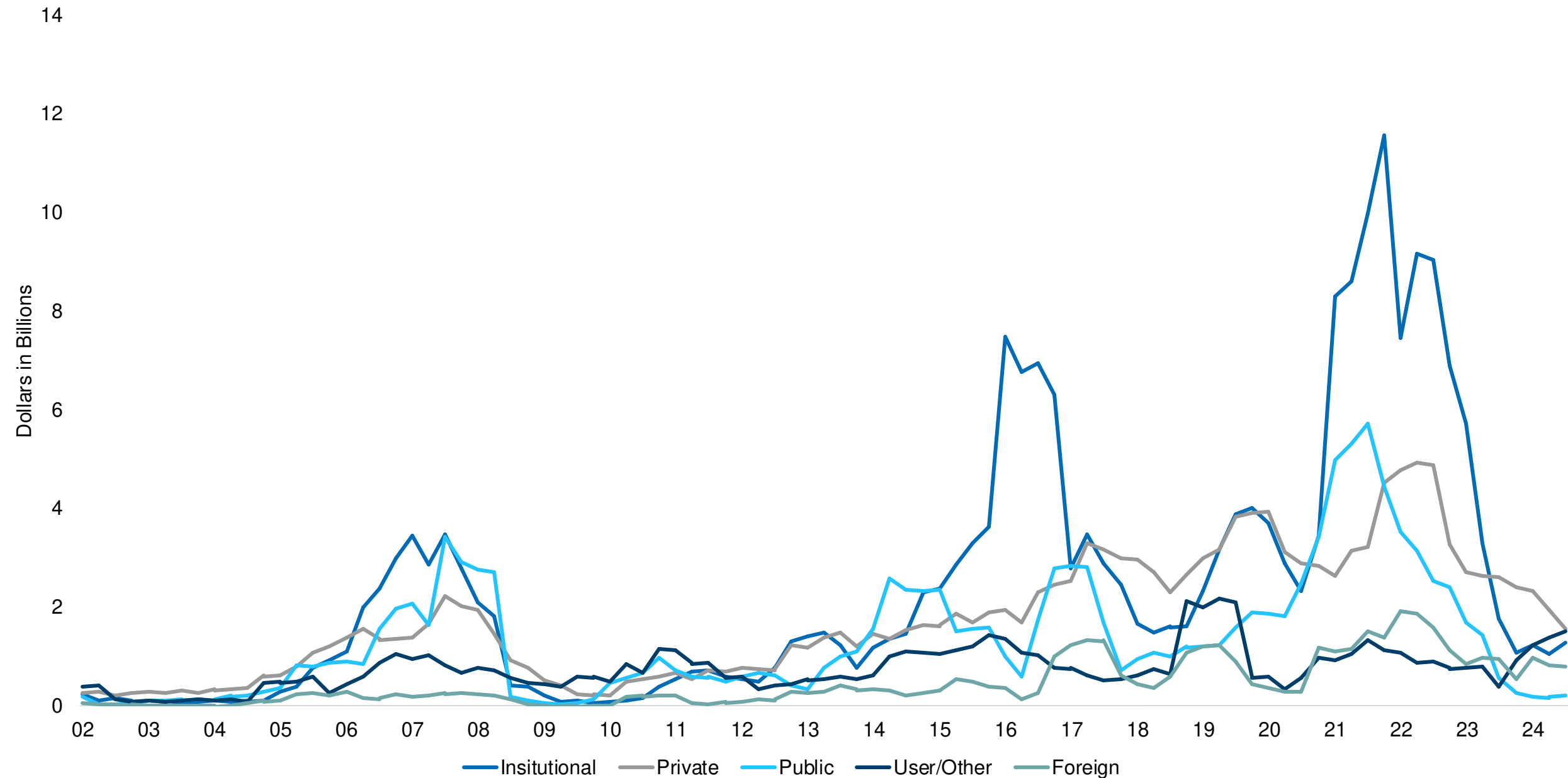
Source: Real Capital Analytics, Newmark Research

As of Q3 2024

# Most Capital Groups Remain on Sidelines Though Some Occupiers Taking Advantage

Institutional and REIT investor demand drove the acquisitions to their 2021 peak; however, since then these groups have become very quiet, particularly REITs. Private capital acquisitions seemed to be stabilizing in 2023 at levels commensurate with pre-pandemic but have more recently decelerated. Foreign capital activity has been more stable, which coupled with weak activity from other sectors has driven the cross-border share to a new record (19% 24YTD). User acquisitions have accelerated both in nominal and share terms.

R&D\* Acquisition Volume, Rolling 4-Quarter

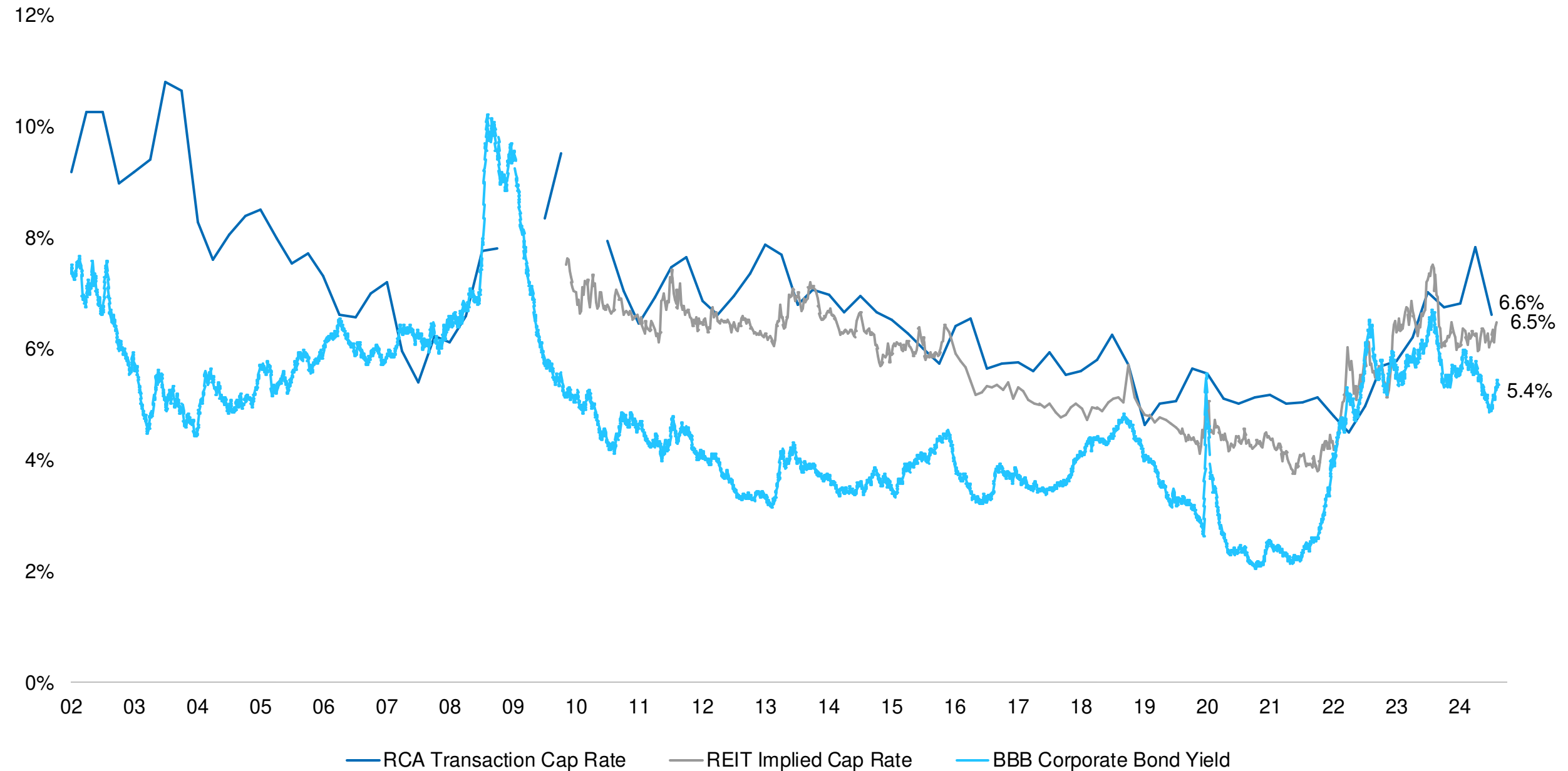


Source: RCA, Newmark Research as of 10/23/2024  
 \*R&D property subtype is a proxy for Life Science

# Life Science Cap Rates Have Risen Significantly

The spread to BBB corporate bond yields, a proxy for the cost of low leverage, fixed-rate debt, is modestly positive but extremely tight compared to historical averages. This will continue to place upward pressure on cap rates in public and private markets.

## R&D\* / Life Science Cap Rates

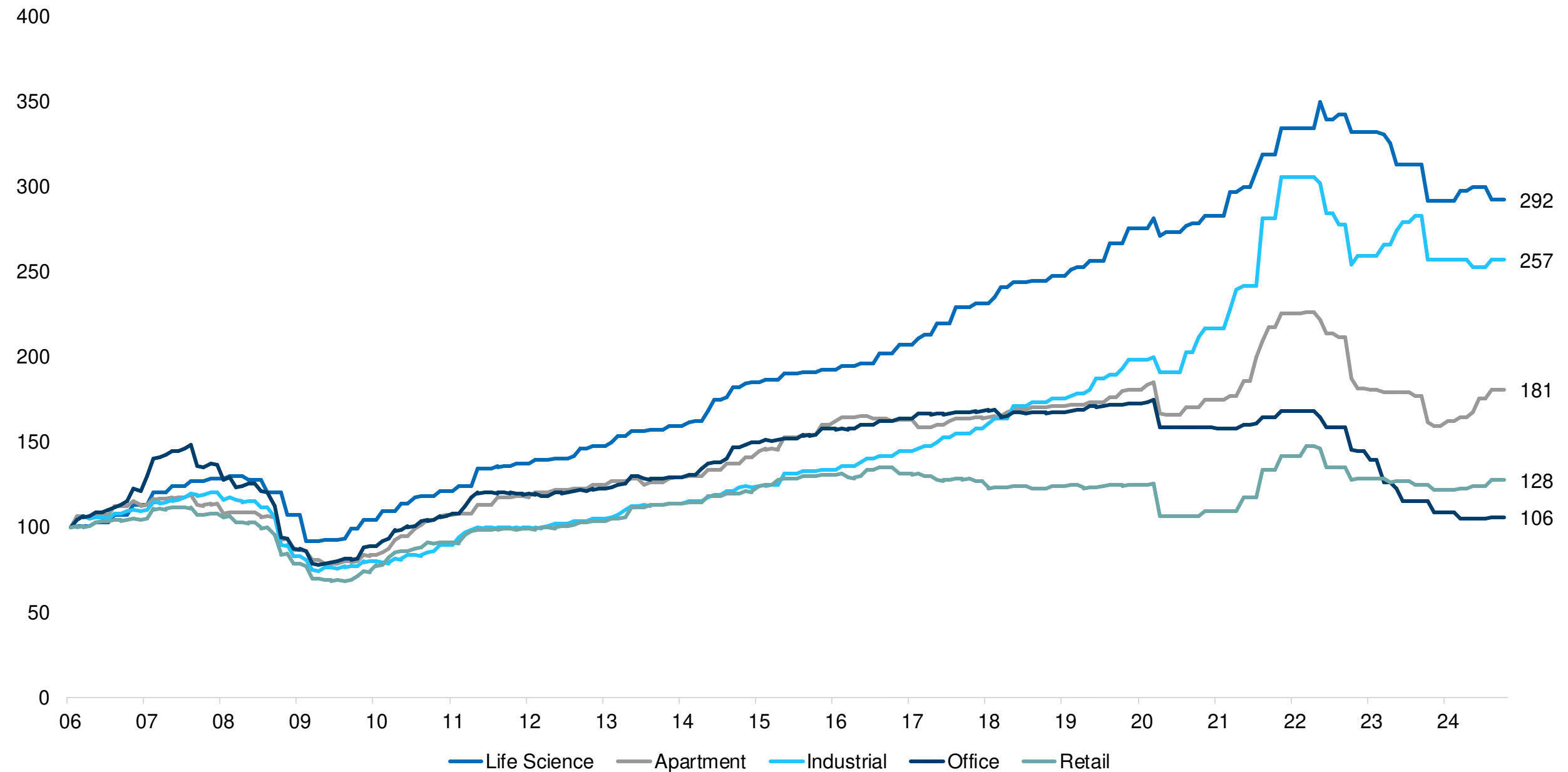


Source: RCA, Green Street, Ice Data Indices, LLC, Newmark Research as of 10/23/2024  
\*R&D property subtype is a proxy for Life Science

# Life Science Has Outperformed All Other Property Types Since 2008

From 2019 to the post-pandemic peak, life science outperformed all sectors except industrial, up 23%. Life science values are now down 16% from the peak, much better than Office peak-to-trough change and roughly equal with the other property types. While this augurs poorly for the returns of investors who entered at the top of the market, these price declines are unlikely to foment the kinds of issues in pre-pandemic vintage debt widely projected for the office sector. Indeed, life science values are up 6% compared to December 2019.

Green Street Commercial Property Price Index (Aug 2005 = 100)

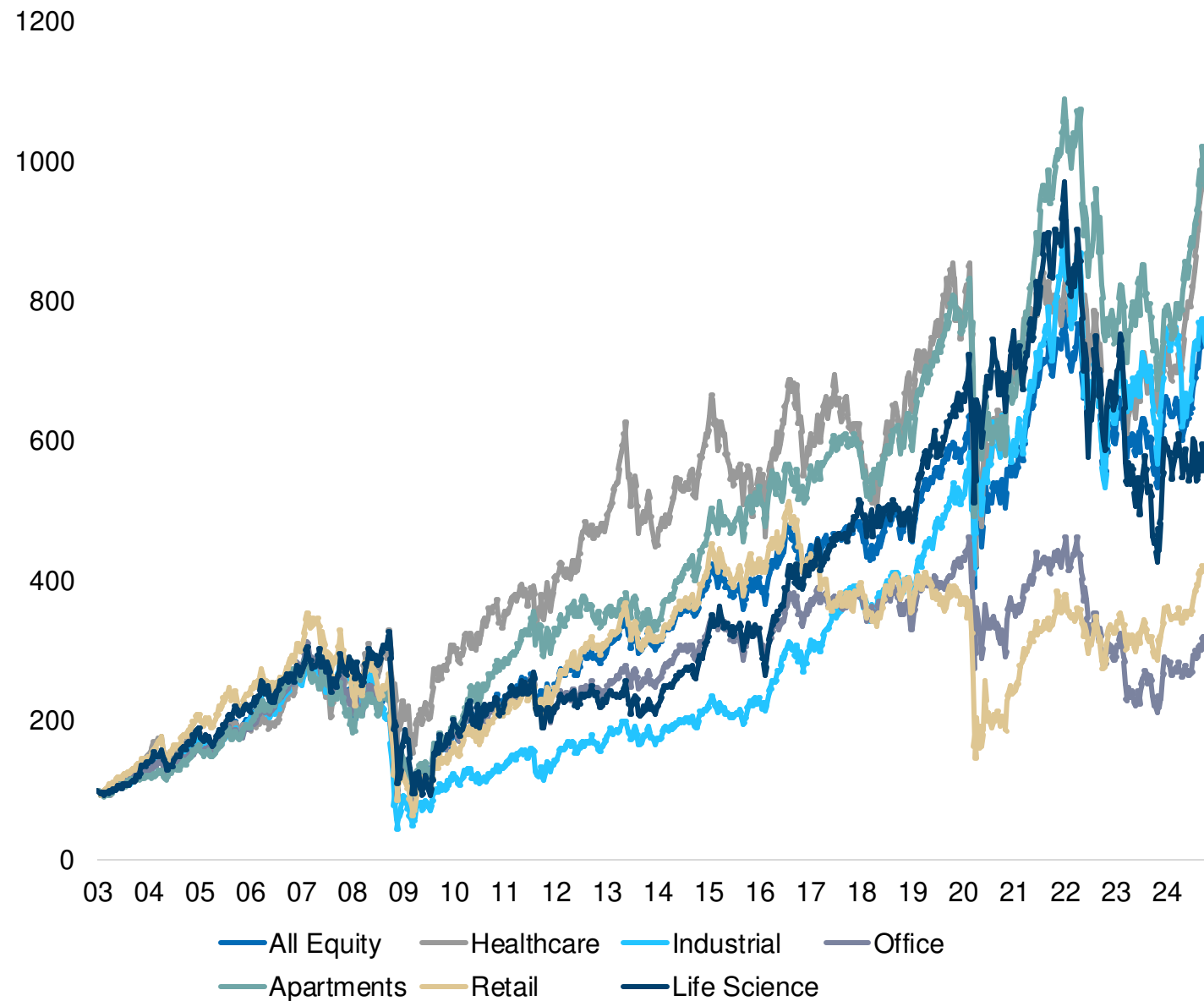


Source: Green Street, Newmark Research as of 10/30/2024

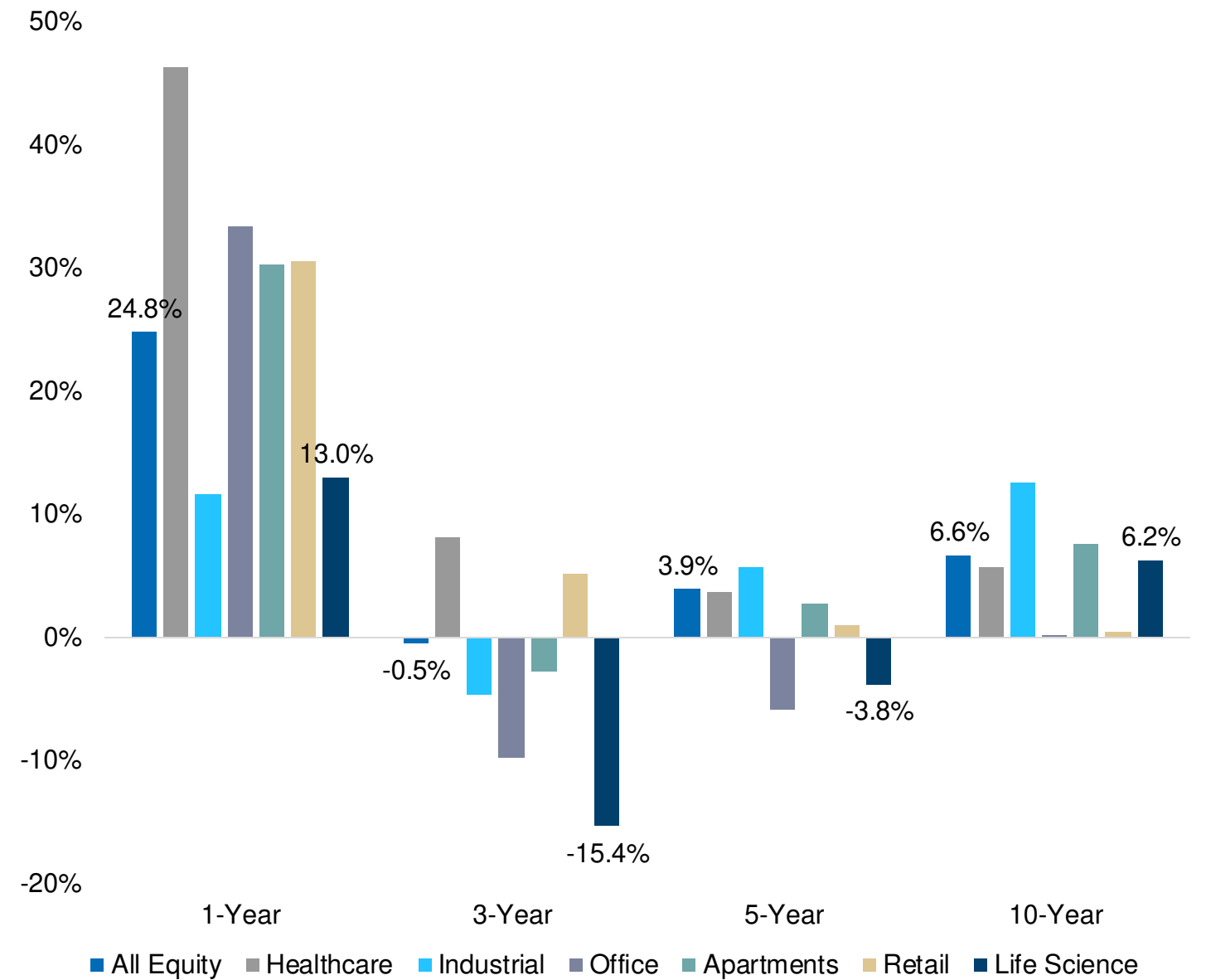
# Life Science REITs Have Underperformed in Recent Years

In contrast to other sectors, there is not a deep bench of REITs to use to proxy the performance of the life science sector. Accordingly, public market performance is more easily skewed by security specific factors. With that caveat, life science has underperformed the overall market over the last 1-, 3- and 5-years while effectively matching on a 10-year hold.

REIT Total Return



REIT Total Return CAGR

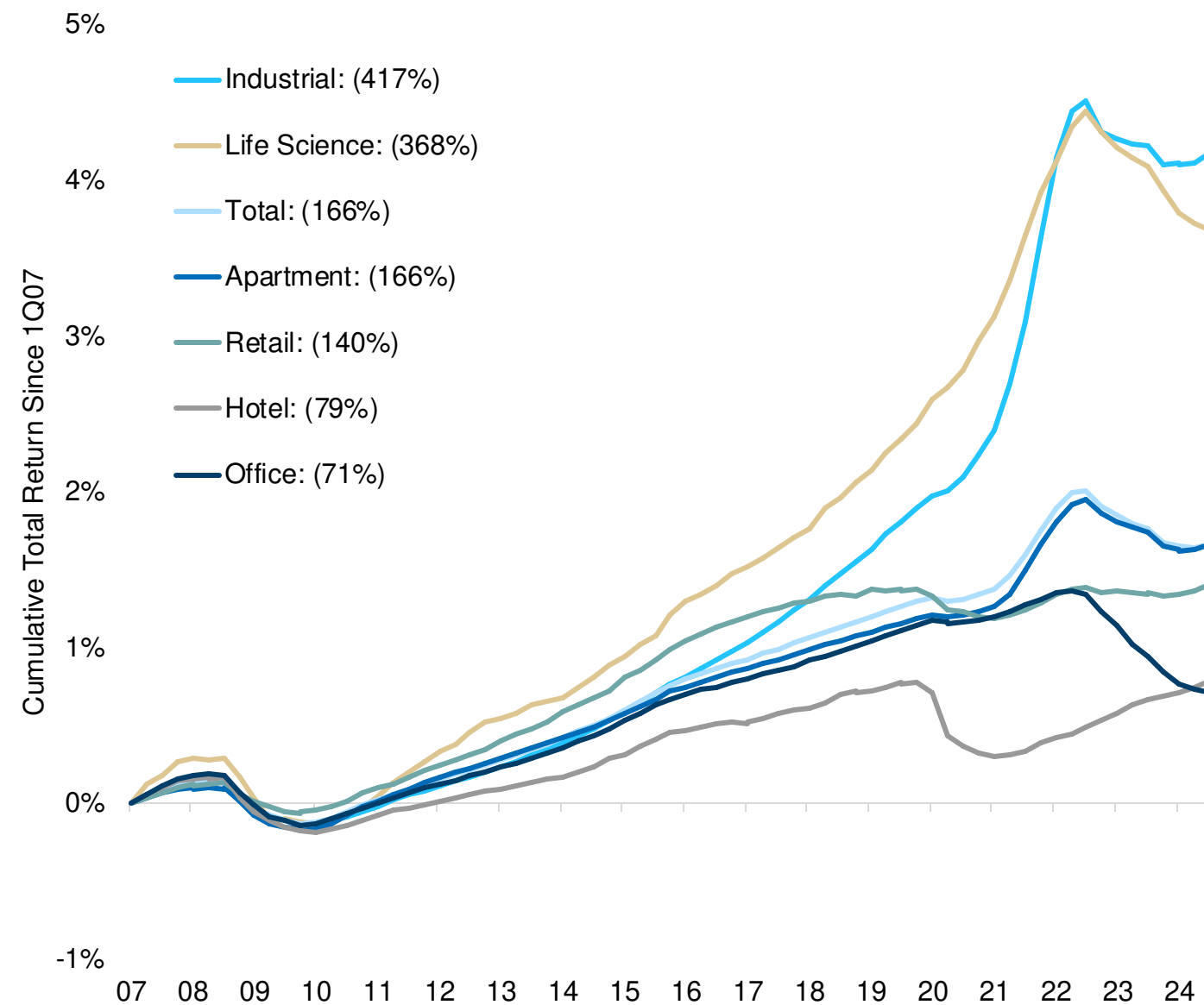


Source: Bloomberg; Moody's Analytics Calculated, Newmark Research as of 11/1/2024  
 Note: Alexandria Real Estate Equities used to represent life science REIT performance.

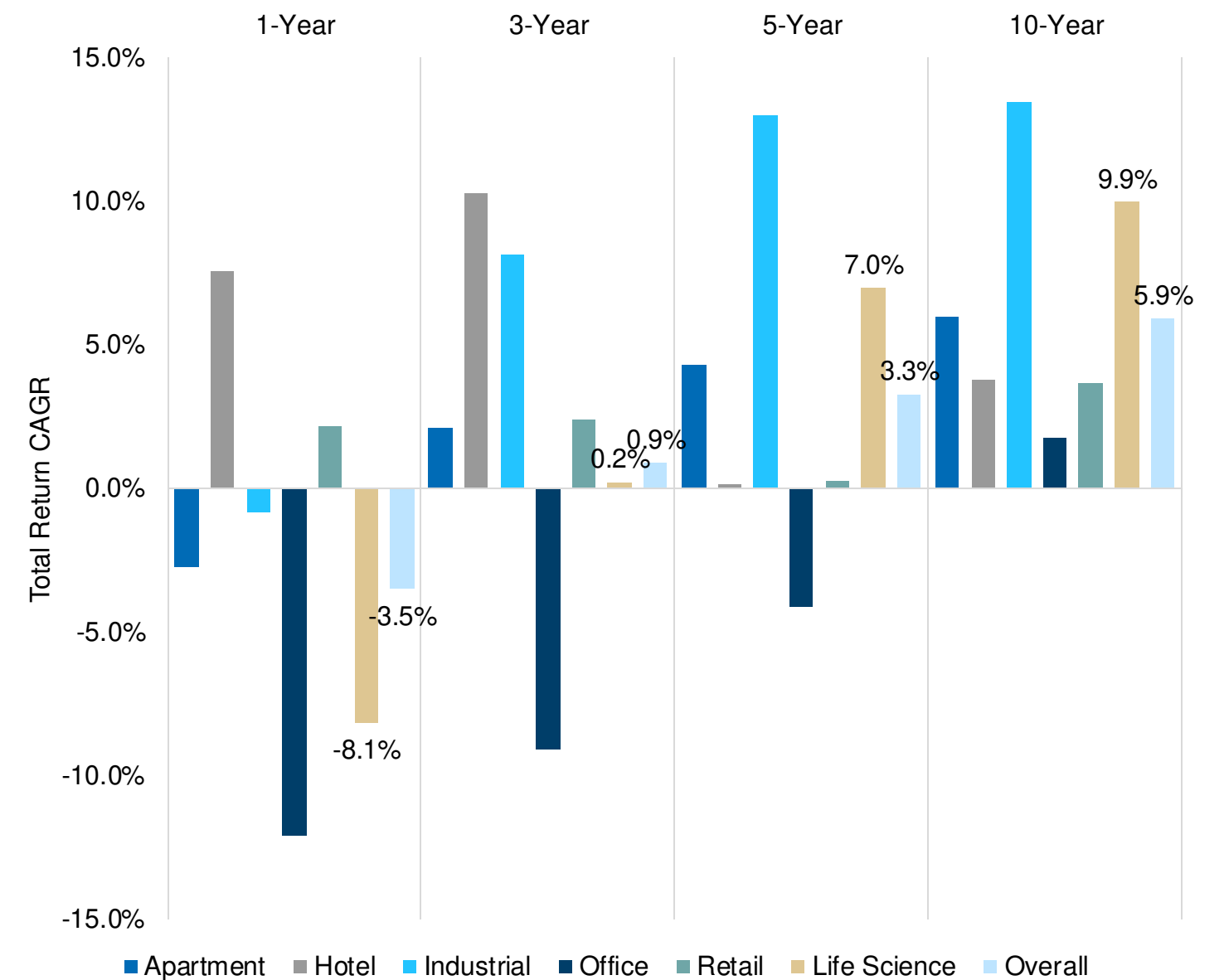
# Private Market Returns Second Only to Industrial Over Last 10 Years

Life science has generated negative total returns for the last eight quarters with a total drawdown of negative 17.2%, slightly underperforming the national property index at negative 17.3%. This performance is similar to the decline in the Life Science CPPI. Looking over longer time spans, life science has consistently outperformed most sectors in the NPI.

NCREIF Life Science Sector Has Outperformed All But Industrial Since 2007



Only Industrial Has Outperformed in Last 10 Years, Returns Softened in TTM



Source: NCREIF, Newmark Research as of 10/30/2024



# Life Science Market Profiles



# Boston

- Tenants seeking built-out space have their pick of spec suites, subleases and second-generation spaces.
- The supply-imbalance continues to weigh on laboratory vacancy across Greater Boston, which has increased for a ninth consecutive quarter.
- The region's laboratory inventory has more than doubled since the fourth quarter of 2019 and now stands at nearly 47 million SF.
- While tenant demand remains elevated, at roughly 1.9 million SF, several of these requirements are subject to additional funding or are on hold.
- The IPO window appears to be opening for the life science sector, with four local firms slated to go public by the end of 2024.

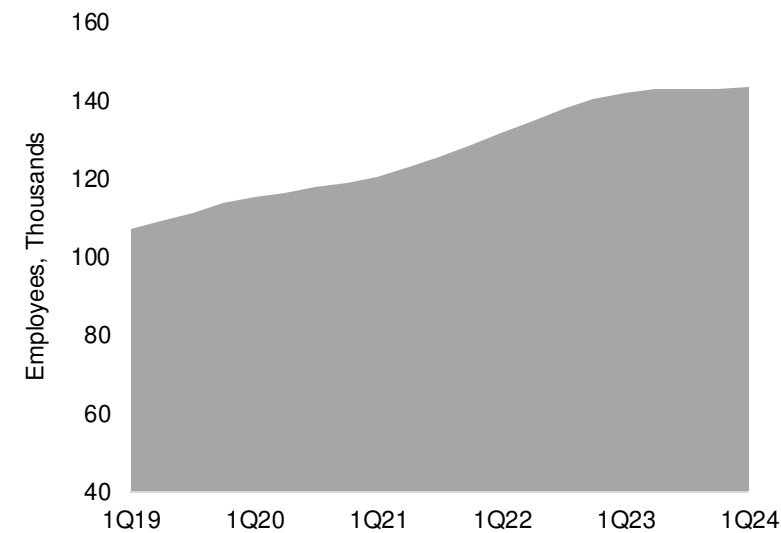
## Select Lease Transactions

Tenant	Building / Address	Submarket	Type	Square Feet
Vertex Pharmaceuticals	50 Northern Ave., Boston	Boston – Seaport	Lease Renewal	556,096
Vida	66 Galen St., Watertown	Inner Suburbs/Urban Edge	Direct Lease	61,189
LifeMine Therapeutics	66 Galen St., Watertown	Inner Suburbs/Urban Edge	Direct Lease	56,000
GC Therapeutics	610 Main St. – North, Cambridge	East Cambridge	Sublease	32,688

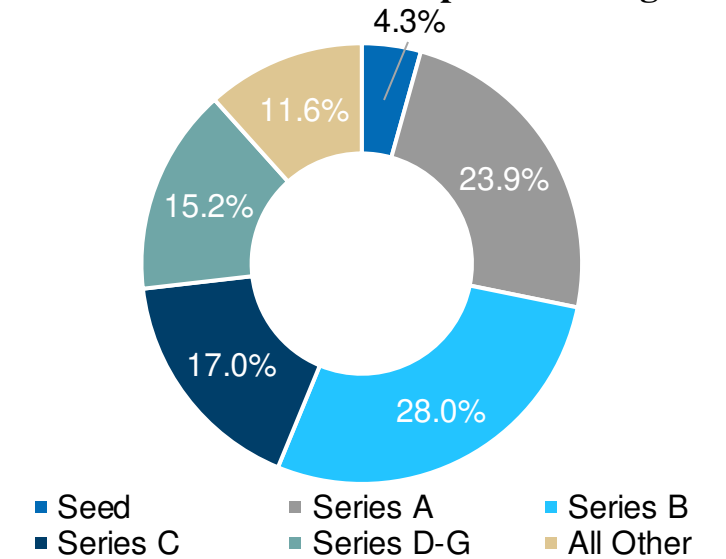
## Select Sale Transactions

Building / Address	Submarket	Sale Price	Price / SF	Square Feet
730-750 Main St., Cambridge	East Cambridge	\$361M	\$1,646	219,226

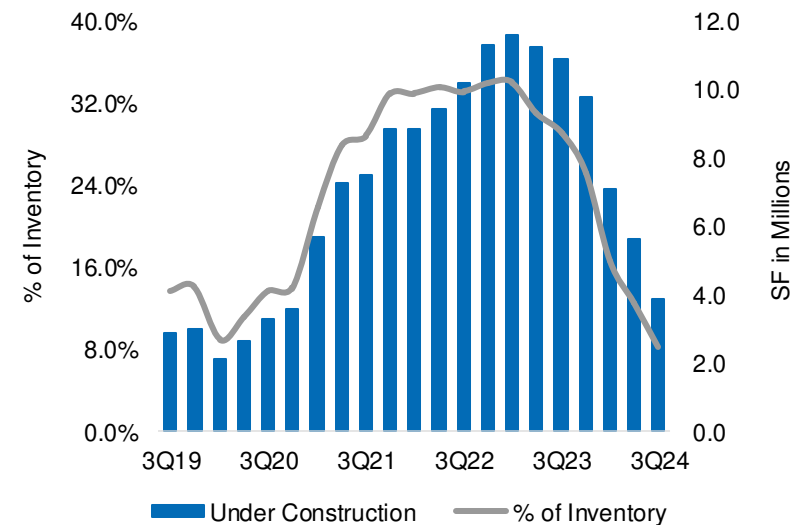
## Life Science Employment



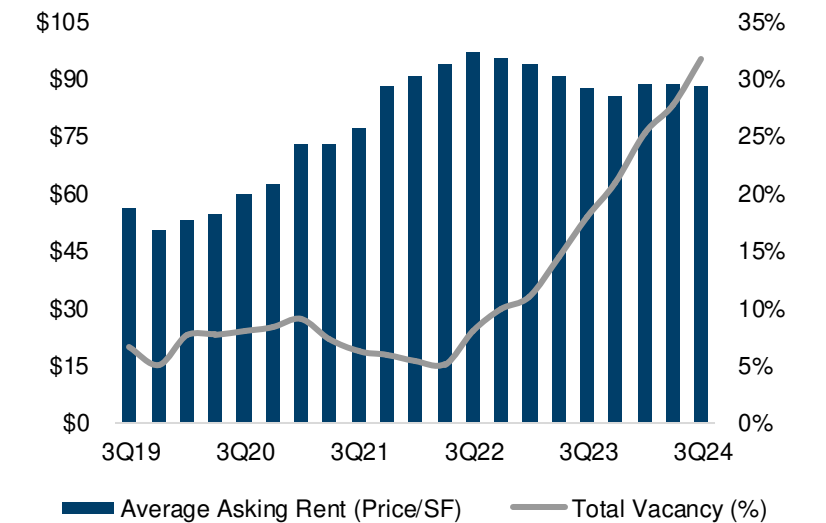
## YTD 2024 Venture Capital Funding



## Life Science Construction



## Asking Rent and Vacancy



## Third Quarter Stats

46.7 MSF Total Inventory	3.9 MSF Under Construction	630 KSF YTD Net Absorption
31.6% Vacancy Rate		\$87.68 / SF Asking Rent (NNN)

## Top Tech Transfer Universities

- Harvard University
- MIT
- Tufts University
- Northeastern University
- UMass Boston
- Brandeis University

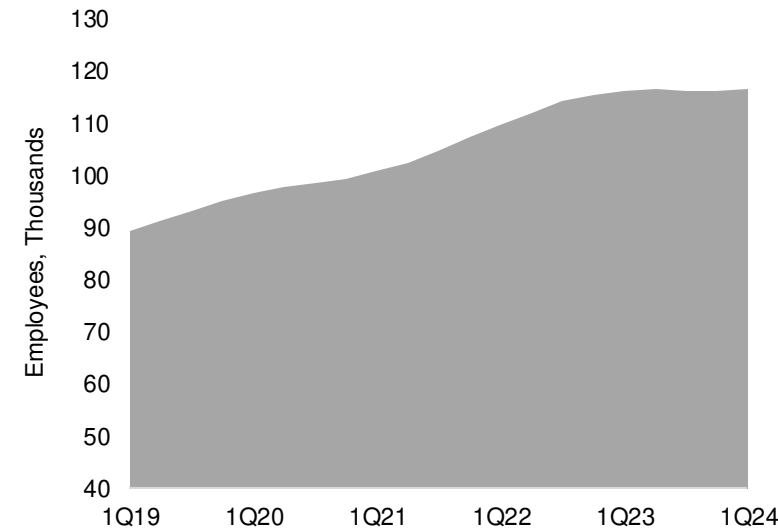
# San Francisco Bay Area

- Market-wide vacancy rose to 27% this quarter, up from 24.6% last quarter. Availability also increased, reaching 29.6% from 27.8% last quarter. Sublease availability, after twelve consecutive quarters of growth, declined slightly to 6.6%, down from 6.9% last quarter.
- Leasing activity surged this quarter, up 35% compared to the prior quarter and 110% year-over-year.
- Biotech venture capital funding in the Bay Area decreased in the third quarter of 2024, with \$1.8 billion raised, compared to \$1.93 billion in the previous quarter. Year-to-date, life science funding has risen gradually, totaling \$6.1 billion, compared to \$5.4 billion over the same period last year.
- Net effective transaction rents remain suppressed, driven by elevated concessions from landlords—a trend likely to persist as supply and demand pressures work toward rebalancing. Future demand will be a key factor in shaping asking rents, particularly for lower-tier assets and in tertiary markets.

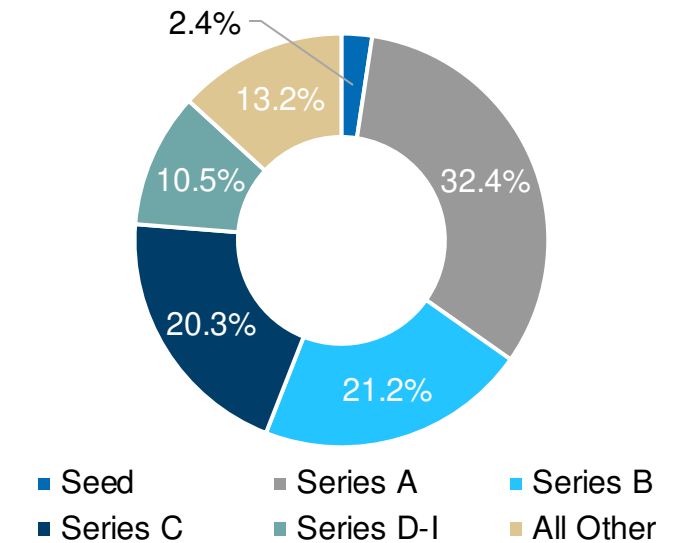
## Select Lease Transactions

Tenant	Building / Address	Submarket	Type	Square Feet
Natera	201 Industrial Rd, San Carlos	San Carlos	Lease Renewal	136,258
Impossible Foods	400 Saginaw Dr, Redwood City	Redwood City	Lease Renewal	60,841
Xaira Therapeutics	700 Gateway Blvd, South San Francisco	South San Francisco	Lease Expansion	56,233

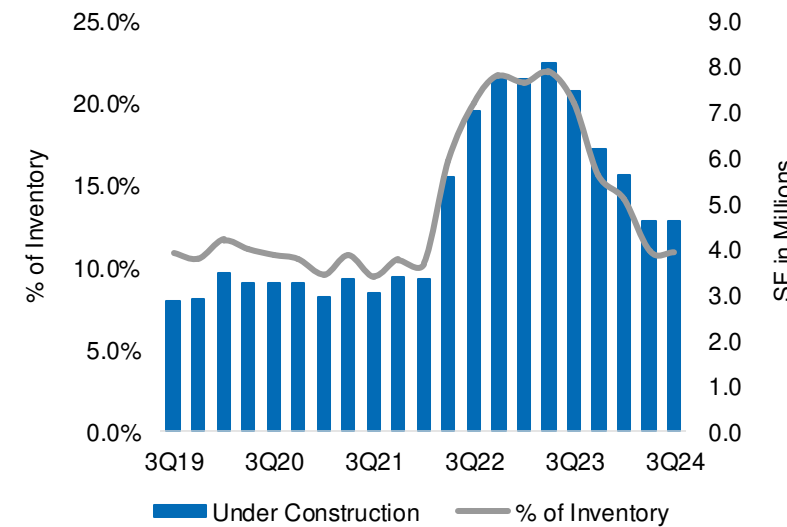
## Life Science Employment



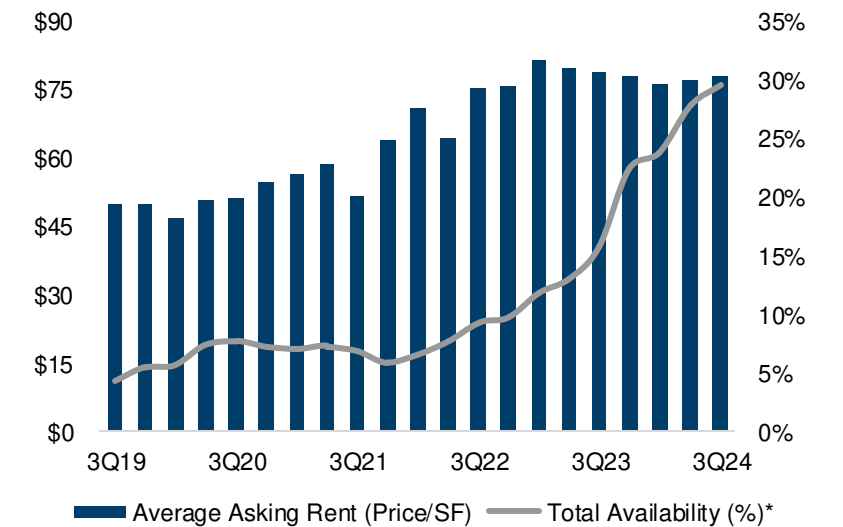
## YTD 2024 Venture Capital Funding



## Life Science Construction



## Asking Rent and Availability\*



## Third Quarter Stats

42.5 MSF Total Inventory	4.6 MSF Under Construction	-2.4 MSF YTD Net Absorption
29.6% Availability Rate*		\$78.00 / SF Asking Rent (NNN)

## Top Tech Transfer Universities

- Stanford University
- University of California, Berkeley

\* Total availability is represented instead of total vacancy since the San Francisco Bay Area Market has not historically separated vacancy and availability.

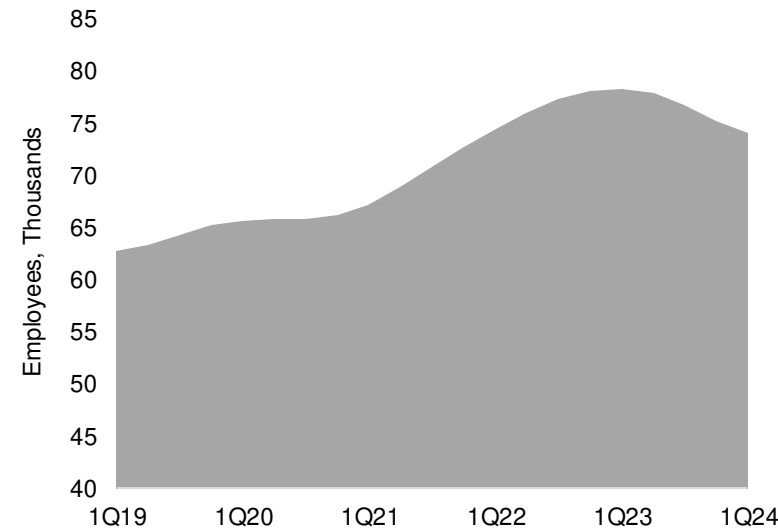
# San Diego

- Asking rents have started to decrease as the vacancy rate climbed over the past two years. The current weighted average asking rate of \$69.75/SF NNN is down 1.3% from a year ago.
- Total vacancy climbed to 17.2%, up 20 basis points from the previous quarter.
- Sublease availability hit a new record, totaling 1.7 million SF.
- 2.5 million SF of new construction is currently underway in San Diego's core submarkets and a further 1.2 million SF of projects are underway in the emerging submarkets of Downtown and Carlsbad.

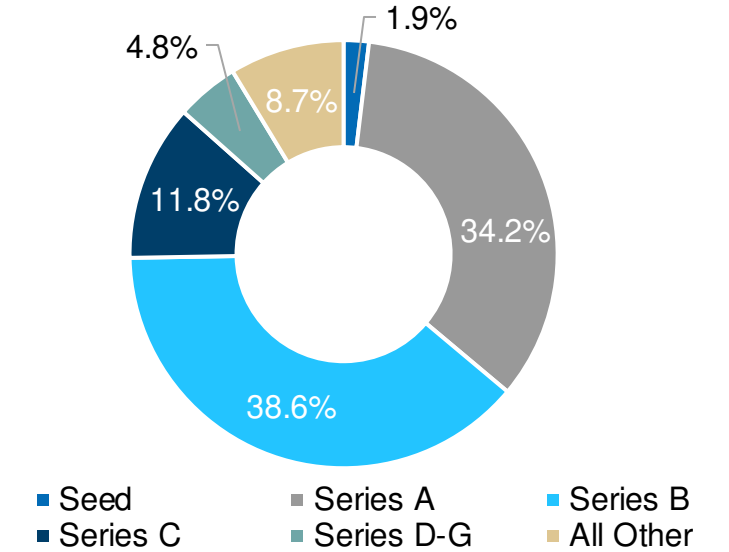
## Select Lease Transactions

Tenant	Building / Address	Submarket	Type	Square Feet
Mirador Therapeutics	4902 Headquarters Pt, San Diego	Sorrento Mesa	Direct Lease	66,569
Genesis Therapeutics, Inc.	4930 Directors Pl, San Diego	Sorrento Mesa	Direct Lease	37,400
Insulet Corporation	9276 Scranton Road, San Diego	Sorrento Mesa	Lease Renewal	28,778

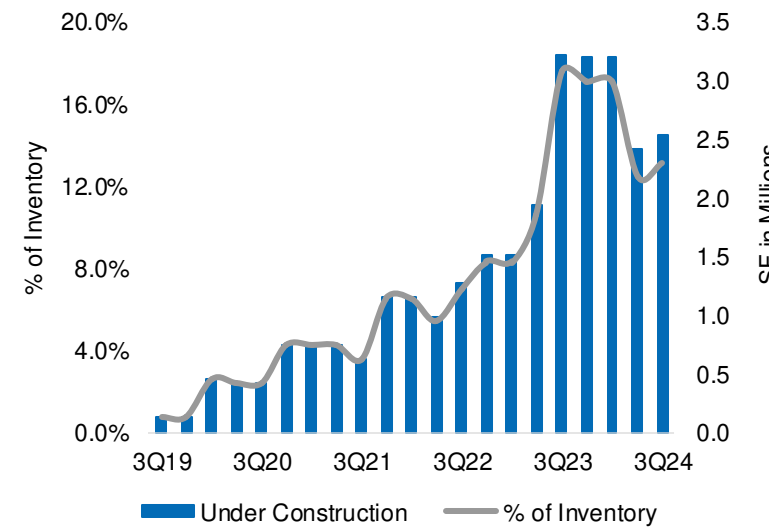
## Life Science Employment



## YTD 2024 Venture Capital Funding



## Life Science Construction



## Asking Rent and Vacancy



## Third Quarter Stats

19.4 MSF Total Inventory	2.5 MSF Under Construction	193 KSF YTD Net Absorption
17.2% Vacancy Rate		\$69.75 / SF Asking Rent (NNN)

## Top Tech Transfer Universities

- University of California, San Diego
- San Diego State University

# Raleigh/Durham (Research Triangle)

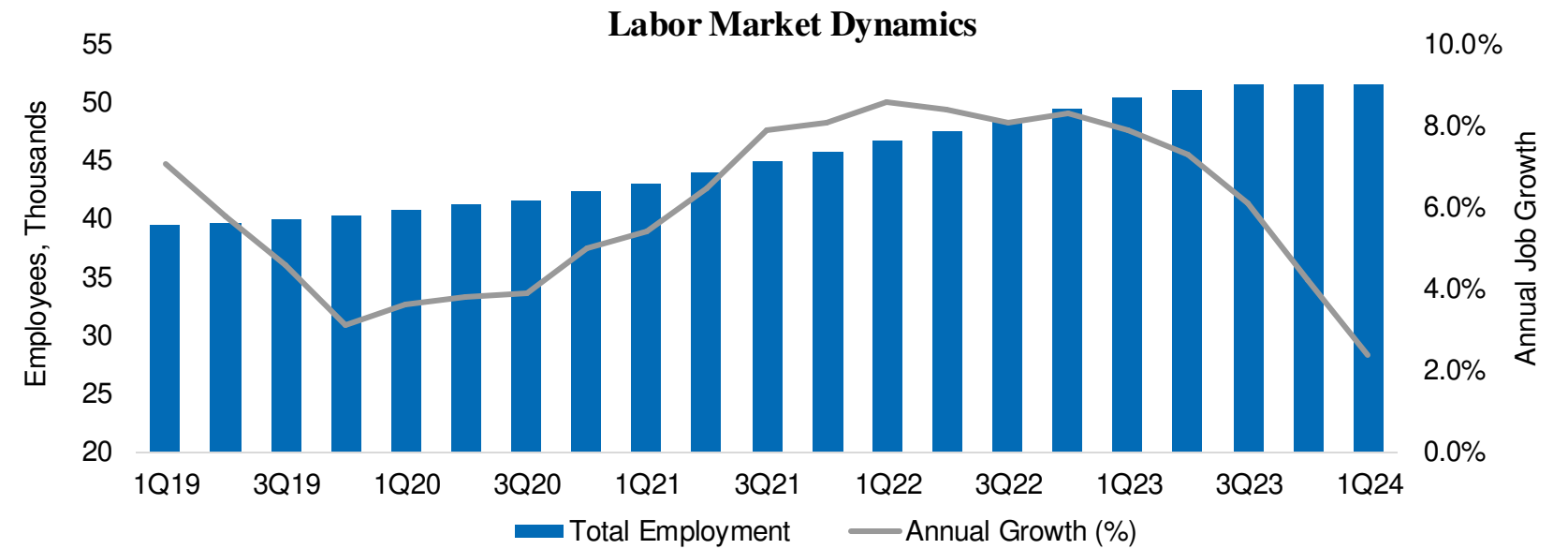
- Market activity remains muted regarding completed transactions, but tour activity has seen an uptick.
- A mix of traditional life science tenants with advanced manufacturing and clean tech are seeking quality cGMP facilities.
- Newly delivered cGMP facilities continue to contribute to the higher vacancies in the market, but with interest rates declining there is optimism that these high capital cost projects will return.
- Most recent leasing activity is within spec labs and mostly 12,000 SF or less. While spec suites provide cost-effective options for life science tenants, they are challenging for landlords to underwrite.

## Select Lease Transactions

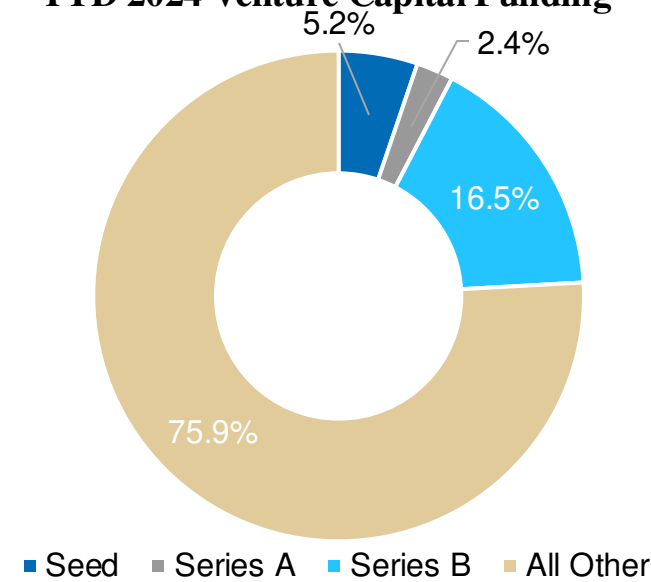
Tenant	Building / Address	Submarket	Type	Square Feet
EPL	615 Davis Dr, Morrisville	RTP/RDU	Lease Renewal	42,500
Ionna	4022 Stirrup Creek Dr, Durham	RTP/RDU	Direct Lease	25,000
Orchid Bioscience	4022 Stirrup Creek Dr, Durham	RTP/RDU	Direct Lease	7,000

## Select Sale Transactions

Building / Address	Submarket	Sale Price	Price / SF	Square Feet
78 TW Alexander Drive	RTP/RDU	\$33M	\$347	95,000



## YTD 2024 Venture Capital Funding



**Top Tech Transfer Universities**

1. North Carolina State University
2. Duke University
3. University of North Carolina at Chapel Hill

## Third Quarter Stats

<b>12.9 MSF</b> Total Inventory	<b>0 SF</b> Under Construction	<b>-750 KSF</b> YTD Net Absorption	<b>28.7%</b> Vacancy Rate	<b>\$38.00 / SF</b> Asking Rent (NNN)
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# Greater Philadelphia

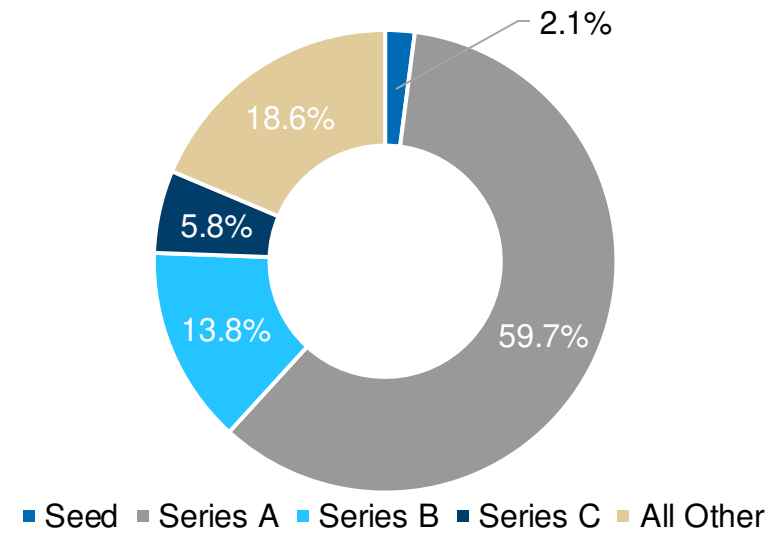
- Sublet availabilities more than doubled from the second quarter to the third quarter of 2024, while total available space remained relatively flat over the quarter.
- There is still 1.3 million SF of laboratory space under construction across Greater Philadelphia. Schuylkill Yards in the University City submarket is expected to deliver in late 2024, which will increase inventory by 478,800 SF. Premium pricing for this new space will likely have a positive impact on asking rents in the fourth quarter of 2024.
- Asking rents for laboratory space in Greater Philadelphia continue to decline, reaching \$48.19/SF NNN in the third quarter of 2024. Compared to the first quarter of 2024, lease rates are down by more than 17%.



## Select Lease Transactions

Tenant	Building / Address	Submarket	Type	Square Feet
Nucleus Radiopharma	727 Norristown Rd., Ambler	Montgomery County	Direct Lease	48,000
Wistar Institute	3675 Market St., Philadelphia	University City	Sublease	25,000

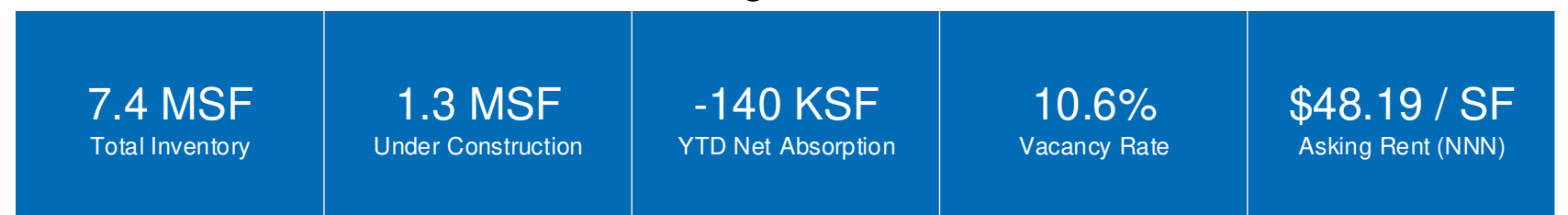
### YTD 2024 Venture Capital Funding



1. University of Pennsylvania
2. Drexel University
3. Temple University

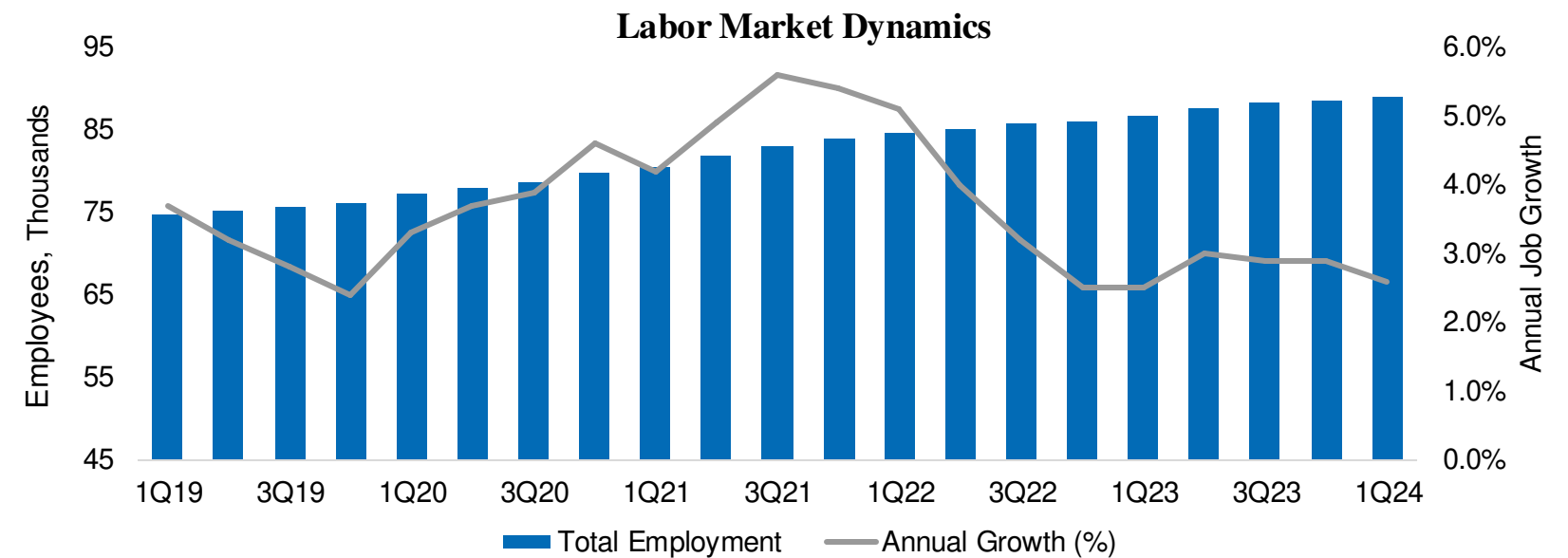
### Top Tech Transfer Universities

### Third Quarter Stats



# Maryland / Mid-Atlantic

- The Mid-Atlantic life science market has experienced an oversupply of space. This has resulted in the average lease term for new leases being a little over five years; a decrease from almost 10 years in 2022. This has led to many developers in the region halting speculative construction, with most projects only breaking ground once an anchor tenant is secured. This slowdown in new deliveries will give the market time for demand to catch up with the oversupply.
- Despite the slowdown, the long-term growth outlook for the Mid-Atlantic life science market remains positive, thanks to the region's highly educated workforce and top research institutions, including Johns Hopkins University and the University of Maryland. These institutions continue to provide a steady pipeline of highly skilled workers for the life science sector.
- Even with the current market slowdown, major institutions in the region are expanding. Montgomery County recently announced a University of Maryland-anchored project to build up to 3.7 MSF of life science-focused, mixed-use space near the North Bethesda metro station.



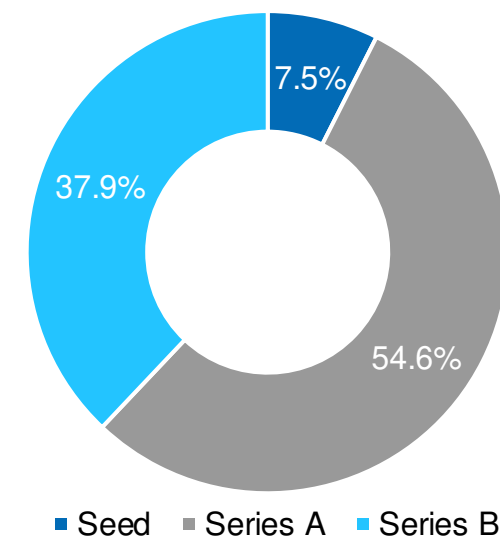
## Select Lease Transactions

Tenant	Building / Address	Submarket	Type	Square Feet
Precision for Medicine	8425 Precision Way, Frederick	Fredrick County	Lease Expansion/Renewal	75,240
BlueHalo	20521 Seneca Meadows Parkway, Germantown	Germantown	Direct Lease	57,108
Biofactura	8435 Progress Drive, Frederick	Fredrick County	Direct Lease	17,520

## Select Sale Transactions

Building / Address	Submarket	Sale Price	Price / SF	Square Feet
10301 Georgia Ave.	Kensington / Wheaton	\$15.3 M	\$169	90,000
10521 Rosehaven St.	Fairfax	\$6.5 M	\$107	61,000
9707 Medical Center Dr.	Rockville	\$5.5 M	\$137	40,200

## YTD 2024 Venture Capital Funding



**Top Tech Transfer Universities**

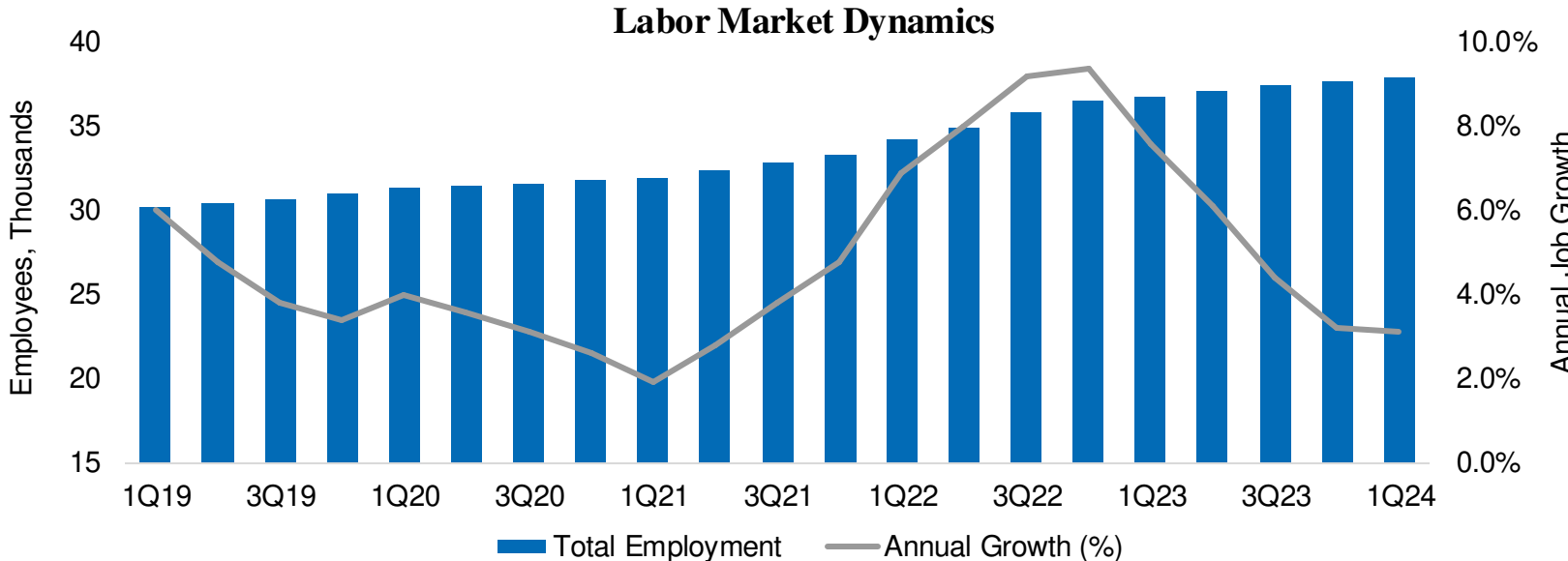
1. Johns Hopkins University
2. University of Maryland, College Park

## Third Quarter Stats

<b>12.2 MSF</b> Total Inventory	<b>550 KSF</b> Under Construction	<b>141 KSF</b> YTD Net Absorption	<b>12.2%</b> Vacancy Rate	<b>\$44.93 / SF</b> Asking Rent (NNN)
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# Seattle

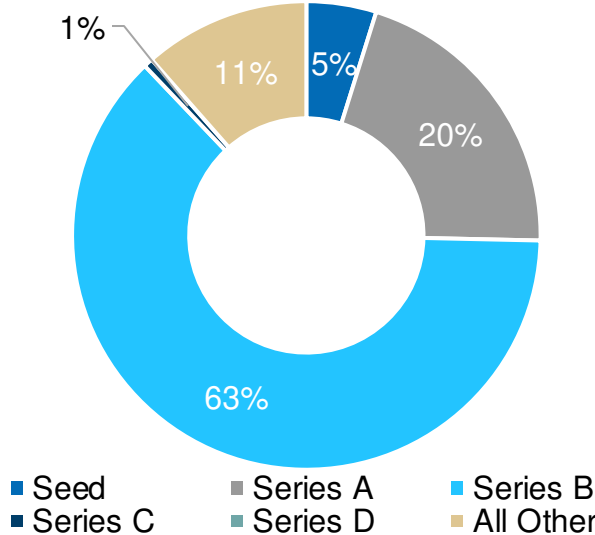
- In the third quarter of 2024, the Puget Sound life science market experienced a modest net positive absorption of 29,768 SF. The vacancy rate had spiked in the first quarter due to the completion of Northlake Commons, which was delivered vacant, along with occupancy losses earlier in the year. By the third quarter, the vacancy rate remained elevated at 9.7%.
- In the third quarter of 2024, life science rents in the Puget Sound market faced downward pressure, with average asking rates decreasing to \$69.02/SF NNN. Seattle lab spaces continue to attract premium rates, with asking rents ranging from \$70 to \$90/SF NNN. In contrast, Bothell and suburban areas provide more affordable options for tenants, ranging from \$32 to \$46/SF NNN.
- Year-to-date, tenant demand has increased, with 24 tenants in the third quarter of 2024 seeking approximately 1.0 million square feet of space. Sublease availability has been steadily climbing since the start of 2023 and reached an all-time high of 4.0% in the third quarter, with 447,000 square feet available.



## Select Lease Transactions

Tenant	Building / Address	Submarket	Type	Square Feet
Allen Institute for Artificial Intelligence	3800 Latona Ave NE, Seattle	Lake Union	Direct Lease	48,900
Cytek Biosciences, Inc.	645 Elliott Ave W, Seattle	Lake Union	Lease Renewal	28,306
Curi Bio	201 Elliott Ave W, Seattle	Lake Union	Direct Lease	13,942

## YTD 2024 Venture Capital Funding



**Top Tech Transfer Universities**

1. University of Washington
2. Washington State University

## Third Quarter Stats

<b>11.0 MSF</b> Total Inventory	<b>710 KSF</b> Under Construction	<b>-90 KSF</b> YTD Net Absorption	<b>9.7%</b> Vacancy Rate	<b>\$69.02 / SF</b> Asking Rent (NNN)
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Sources: JobsEQ, Pitchbook, RCA, Heartland Forward, Newmark Research as of Q3 2024



# Northern New Jersey

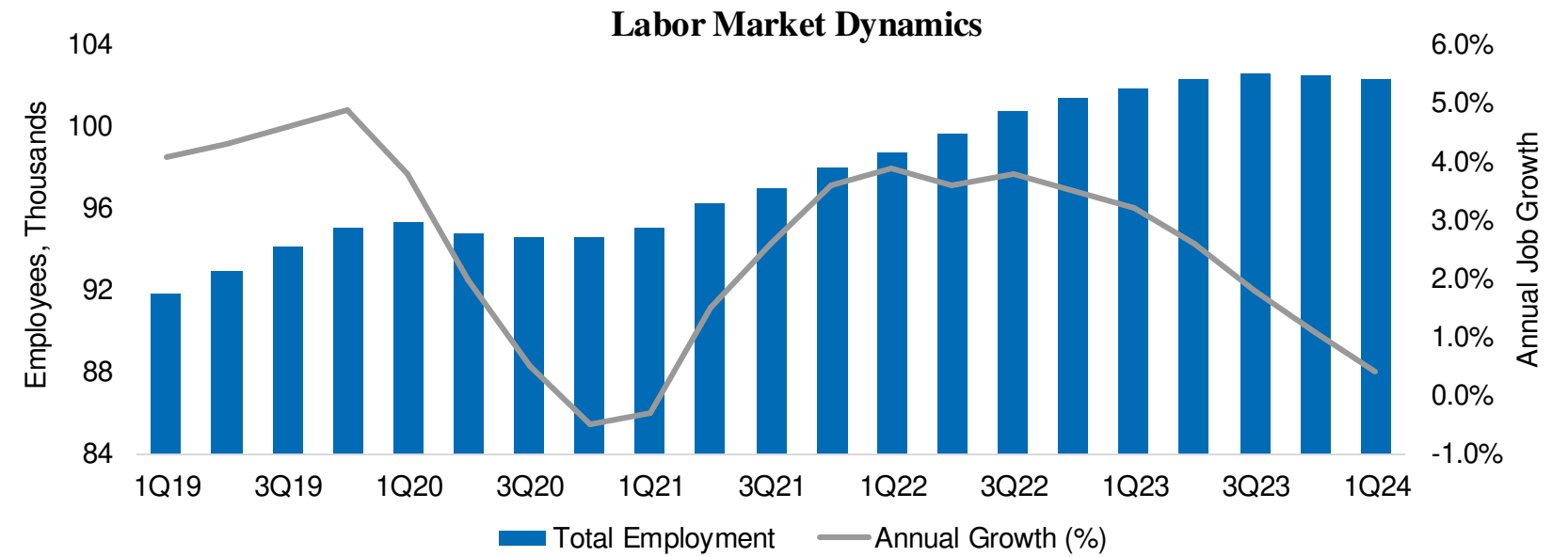
- Within the state's borders reside 14 of the top 20 pharma companies and 8 of the top 10 R&D companies in the world.
- Available lab space is limited despite the new vacancies, and current demand for space exceeds 1.0 million SF.
- New Brunswick's 570,000 SF HELIX property is New Jersey's largest investment in life sciences and medical education. The property is set to deliver in the third quarter of 2026.
- Construction has begun at the 400,000 SF BeiGene manufacturing campus located in the Princeton West Innovation Park in Pennington. The property is set to deliver during the first quarter of 2025.

## Select Lease Transactions

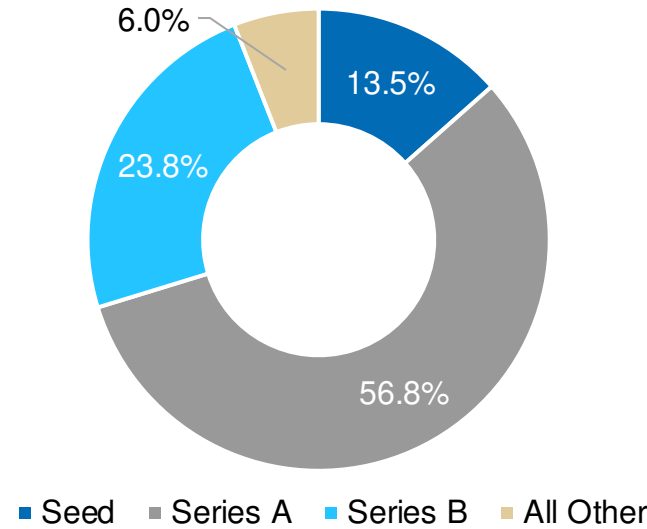
Tenant	Building / Address	Submarket	Type	Square Feet
GenScript ProBio	311 Pennington Rocky Hill Rd, Pennington	Princeton Area	Direct Lease	127,000
CHDI	311 Pennington Rocky Hill Rd, Pennington	Princeton Area	Lease Renewal	19,308

## Select Sale Transactions

Building / Address	Submarket	Sale Price	Price / SF	Square Feet
1 Research Way, Princeton	Princeton Area	\$19M	\$376	50,581
291 Fairfield Ave, Fairfield	Route 46/Wayne	\$12M	\$255	47,000



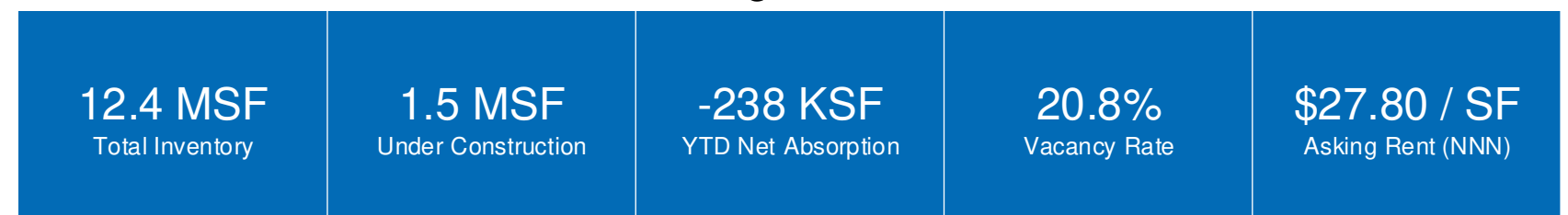
## YTD 2024 Venture Capital Funding



**Top Tech Transfer Universities**

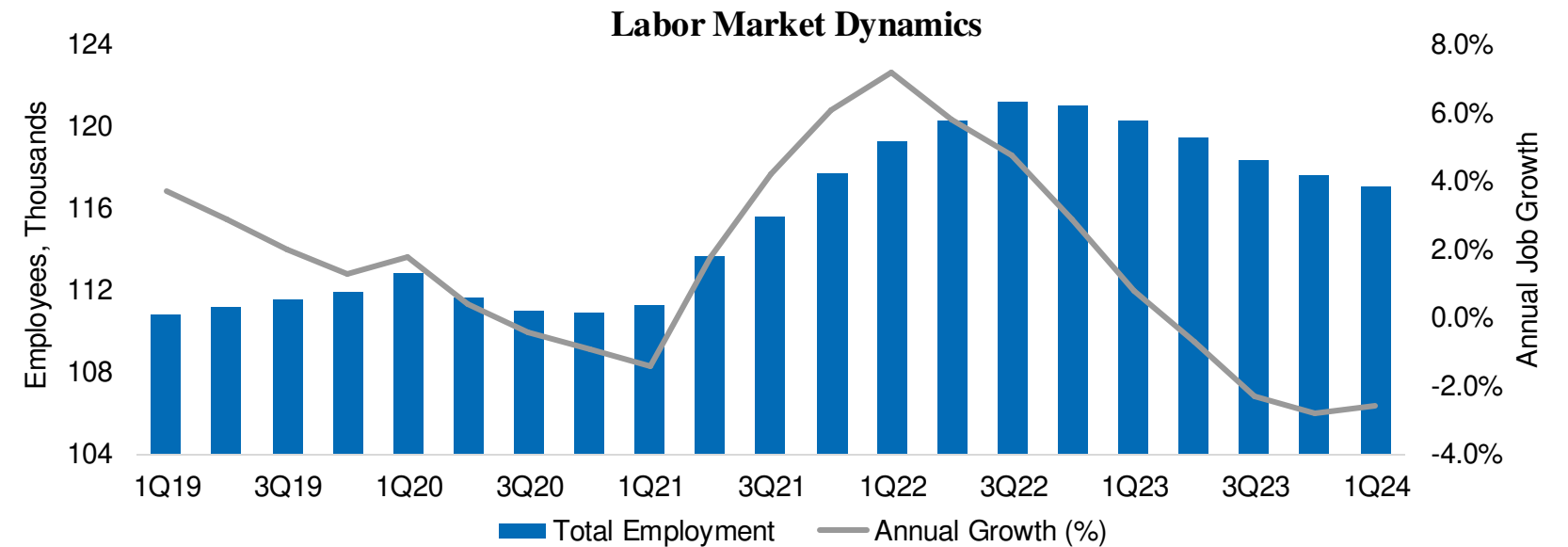
1. Princeton University
2. Rutgers University New Brunswick

## Third Quarter Stats



# Los Angeles – Orange County

- Despite negative absorption, increased tour activity and proposals indicate that Los Angeles life science activity has experienced an uptick, potentially fueled by easing macroeconomic conditions.
- The lack of direct available lab space has continued to act as a buoy, keeping rates steady, stabilizing the local market amidst broader capital markets constraints and conservative demand. This supply constraint has led to market rates holding steady for new space in the \$60.00 to \$72.00/SF NNN range.
- Venture capital firms have remained conservative throughout the head winds of changing interest rates. However, as we have seen with recent announcements in groups such as Tarray (\$120M raise) and Holoclara (\$14M raise), funding is trending upward and 2024 should close with over \$1.5B total in venture capital investment across Greater Los Angeles and 2025 looks optimistic.



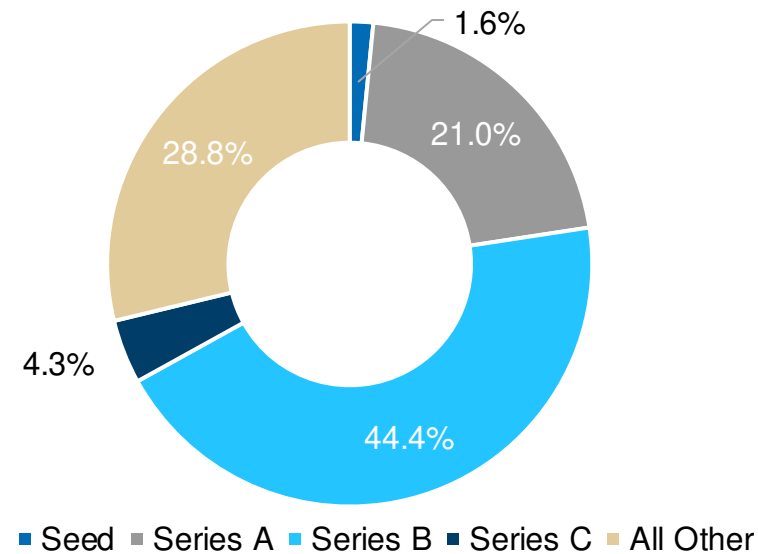
## Select Lease Transactions

Tenant	Building / Address	Submarket	Type	Square Feet
AstraZeneca	18412 Oxnard	Conejo Valley	Direct Lease	128,000

## Select Sale Transactions

Building / Address	Submarket	Sale Price	Price / SF	Square Feet
5210 Pacific Concourse Dr, Los Angeles	El Segundo	\$55M	\$324	170,000

## YTD 2024 Venture Capital Funding



## Top Tech Transfer Universities

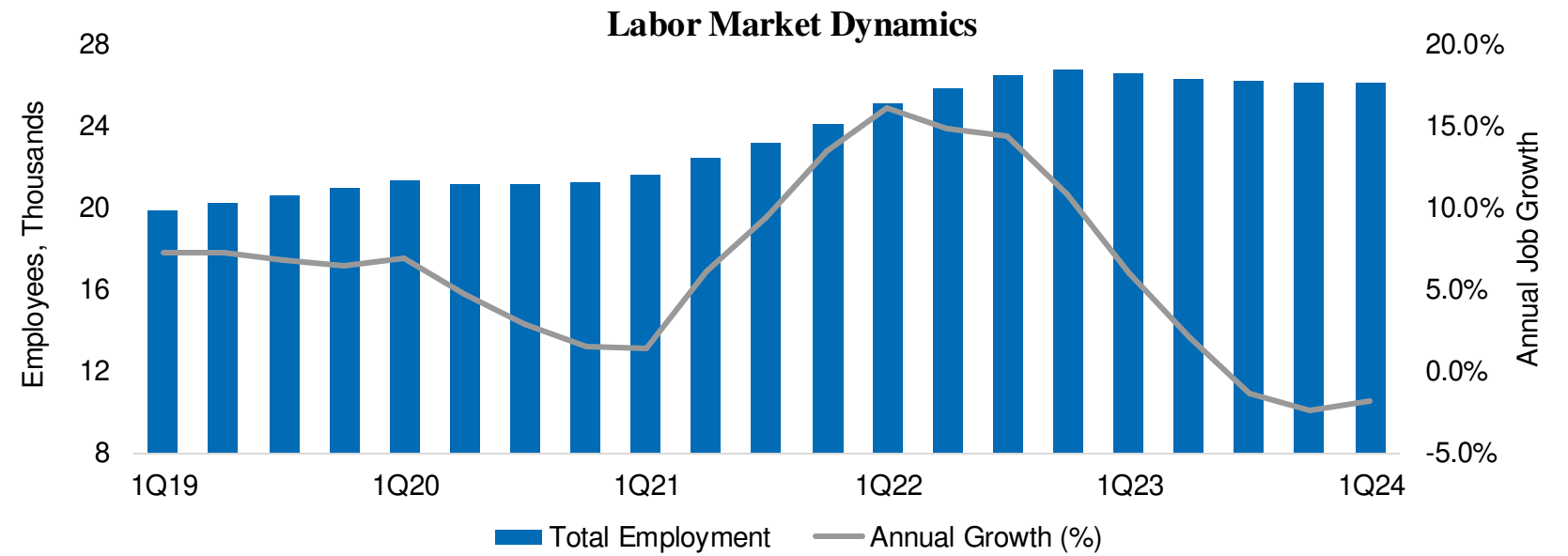
1. California Institute of Technology
2. USC
3. UC Los Angeles
4. UC Davis
5. UC Irvine

## Third Quarter Stats

12.8 MSF Total Inventory	700 KSF Under Construction	-79 KSF YTD Net Absorption	2.3% Vacancy Rate	\$63.00 / SF Asking Rent (NNN)
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# New York City

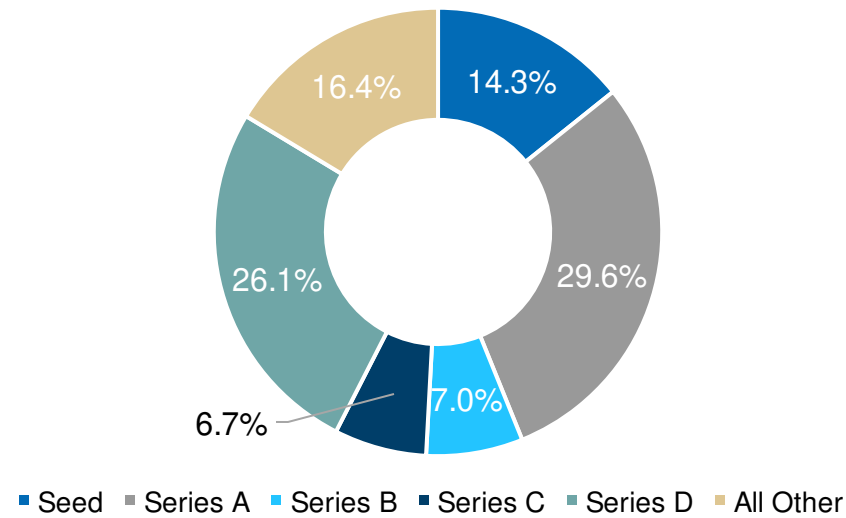
- The Chan Zuckerberg Initiative announced the opening of a new Biohub in NYC. CZ Biohub NY will be housed on Columbia University's campus and will include collaborative efforts from Columbia University, The Rockefeller University and Yale University. The city and state of New York are each contributing \$10 million in funding to the efforts.
- The city and state announced a public/private partnership called SPARC Kips Bay, a new 1.5-million-SF hub that will encompass a full city block for life science, academic and medical use. The project is expected to create 10,000 jobs over the next 30 years, generating a \$25 billion impact to the city.



## Select Lease Transactions

Tenant	Building / Address	Submarket	Type	Square Feet
Chan Zuckerberg BioHub	615 West 131st Street	Upper West Side	Direct New	37,840
Icahn School of Medicine/Mt Sinai	619 West 54th Street	Upper West Side	Direct New	15,094

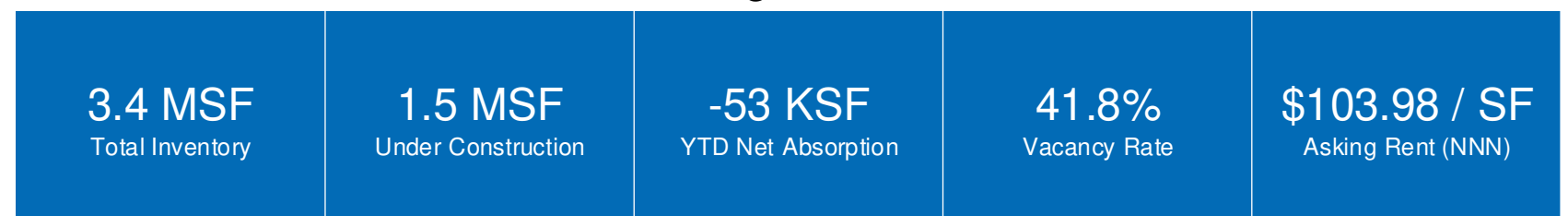
## YTD 2024 Venture Capital Funding



**Top Tech Transfer Universities**

1. Columbia University
2. New York University

## Third Quarter Stats



# Denver/Boulder

- Pfizer's 151,385-SF sublease is generating strong interest and is the largest block of existing lab space in Boulder.
- BioMed Realty delivered 5505 Central Ave. in Boulder, a 60,000 SF speculative purpose-built lab building. New construction remains limited, with no new laboratory buildings now currently under construction.
- ScanlanKempeBard Companies acquired 2555 Midway in Broomfield at auction. The 436,534 SF building is a former pharmaceutical manufacturing facility.
- Colorado's life sciences community raised \$1.2 billion in venture capital funding in the first half of 2024, bringing the total to over \$11 billion raised in the past seven and half years.

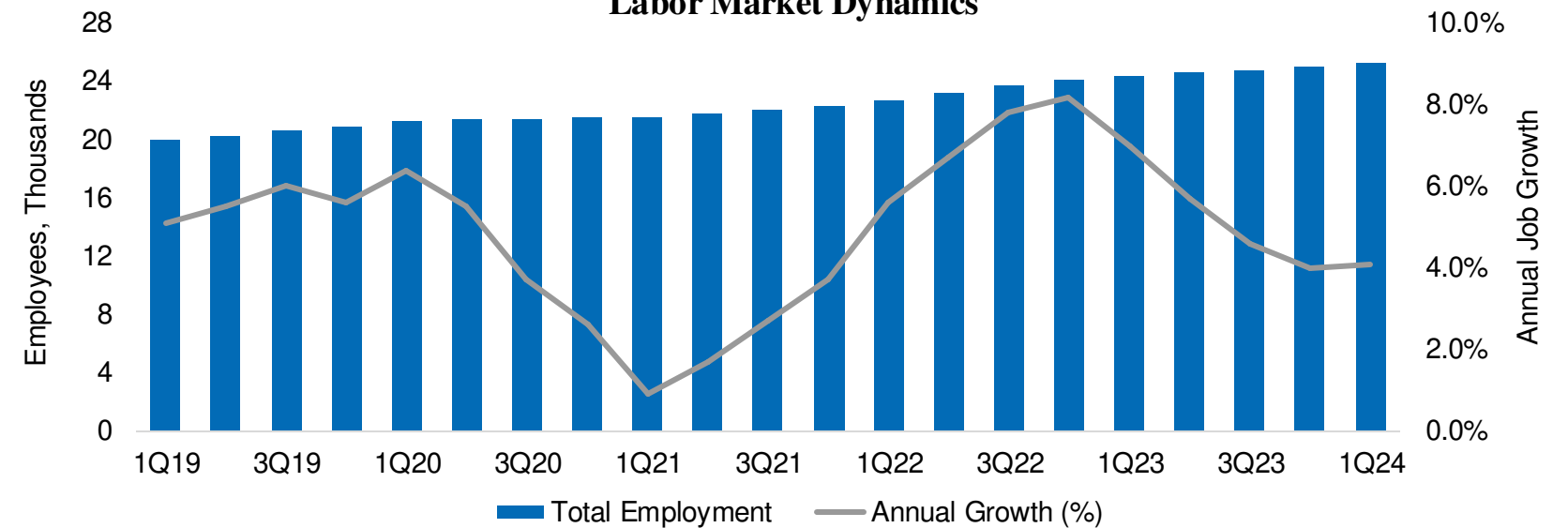
## Select Lease Transactions

Tenant	Building / Address	Submarket	Type	Square Feet
Hyde Consulting and Engineering	1450 Infinite Dr, Louisville	Louisville	Direct Lease	17,647
Viridian Therapeutics	6200 Lookout Rd, Boulder	Boulder	Lease Renewal	7,117
Hyprskn	1450 Infinite Dr, Louisville	Louisville	Direct Lease	2,319

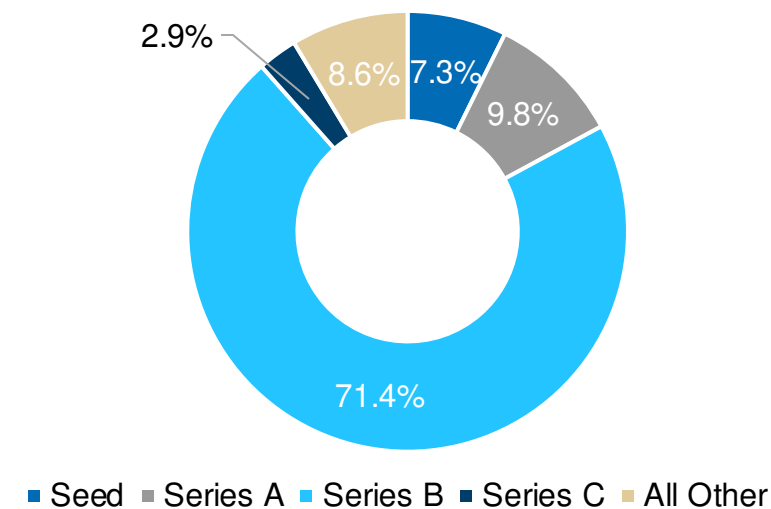
## Select Sale Transactions

Building / Address	Submarket	Sale Price	Price / SF	Square Feet
2555 W Midway Blvd, Broomfield	Northwest	\$17M	\$39	436,534

## Labor Market Dynamics



## YTD 2024 Venture Capital Funding



### Top Tech Transfer Universities

1. University of Colorado Boulder
2. Colorado School of Mines
3. University of Denver

## Third Quarter Stats

<b>4.7 MSF</b> Total Inventory	<b>0 SF</b> Under Construction	<b>-167 KSF</b> YTD Net Absorption	<b>11.8%</b> Vacancy Rate	<b>\$60.00 / SF</b> Asking Rent (NNN)
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# Houston

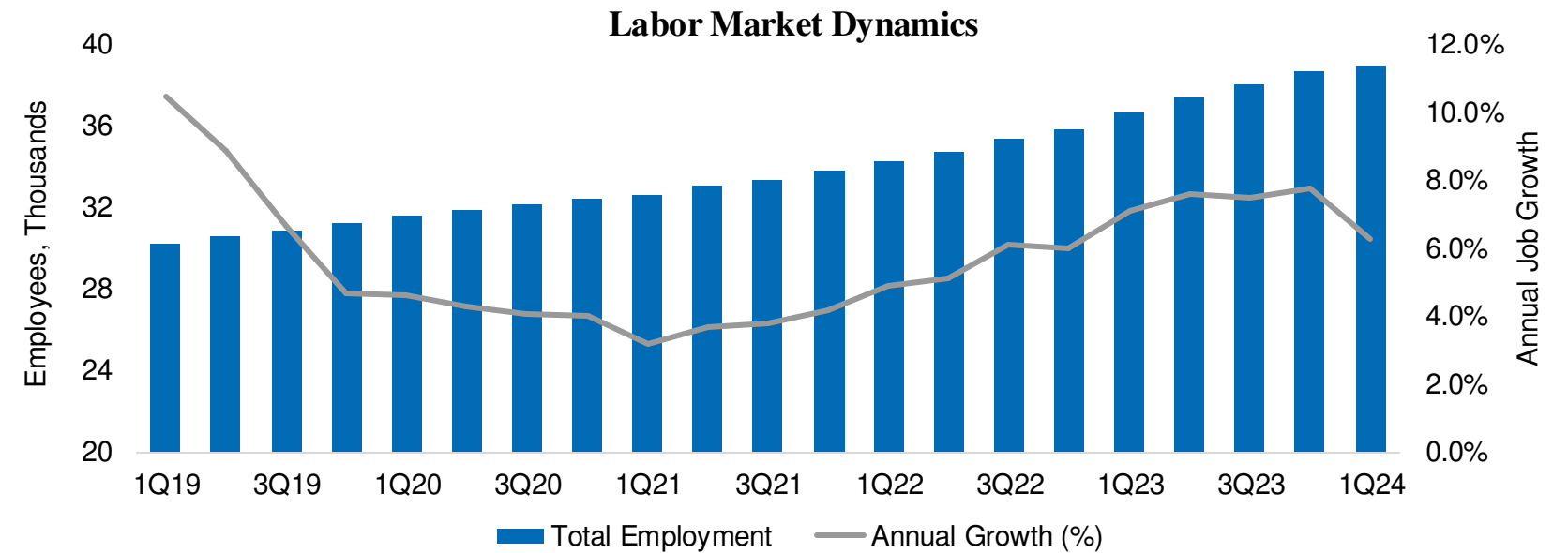
- Rice University announced the launch of RBL LLC, a venture creation studio tied to Rice's Biotech Launch Pad accelerator. RBL LLC will be based at Dynamic One in TMC's Helix Park, where the company recently leased 11,000 SF.
- Swiss biotechnology company Artidis signed a 2,000 SF lease at the TMC3 Collaborative Building on the TMC Helix Park campus. Artidis has been a part of the TMC Innovation Institute's accelerator program since 2019.
- Howard Hughes and Vitrian have announced a joint venture called The Woodlands Innovation District, which aims to attract additional biomanufacturers to the area. The Woodlands Innovation District will include five sites ranging from 40,000 to over 200,000 SF, with tenant occupancy slated for spring of 2025. Existing life science companies in The Woodlands include Cellipoint Bioservices, VGXI, and MilliporeSigma.

## Select Lease Transactions

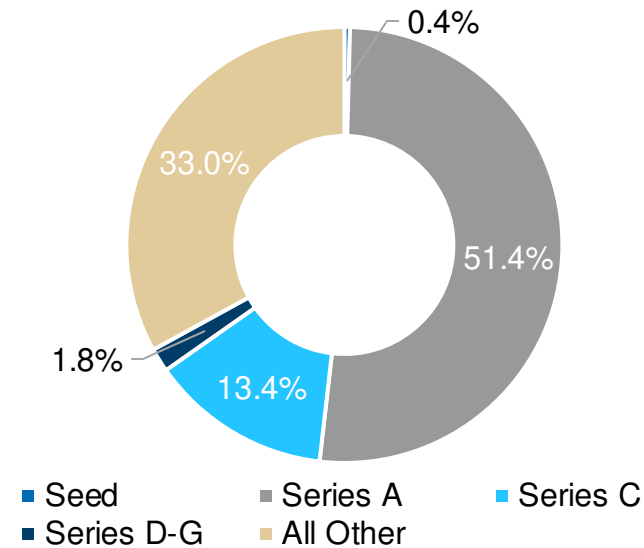
Tenant	Building / Address	Submarket	Type	Square Feet
RBL LLC	1840 Dynamic Way, Houston	Bellaire/Med Center	Direct Lease	11,000
Artidis	TMC3 Collaborative Building, Houston	Bellaire/Med Center	Direct Lease	2,000

## Select Sale Transactions

Building / Address	Submarket	Sale Price	Price / SF	Square Feet
11100 Brittmoore Park Dr, Houston	West Belt	Undisclosed	Undisclosed	71,171



### YTD 2024 Venture Capital Funding

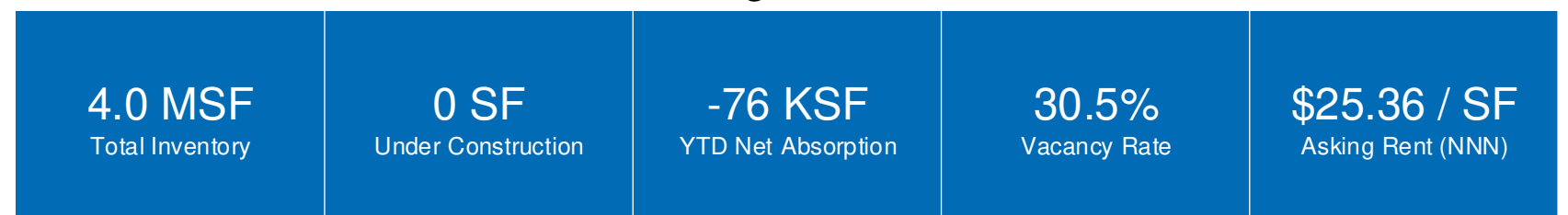




## Top Tech Transfer Universities

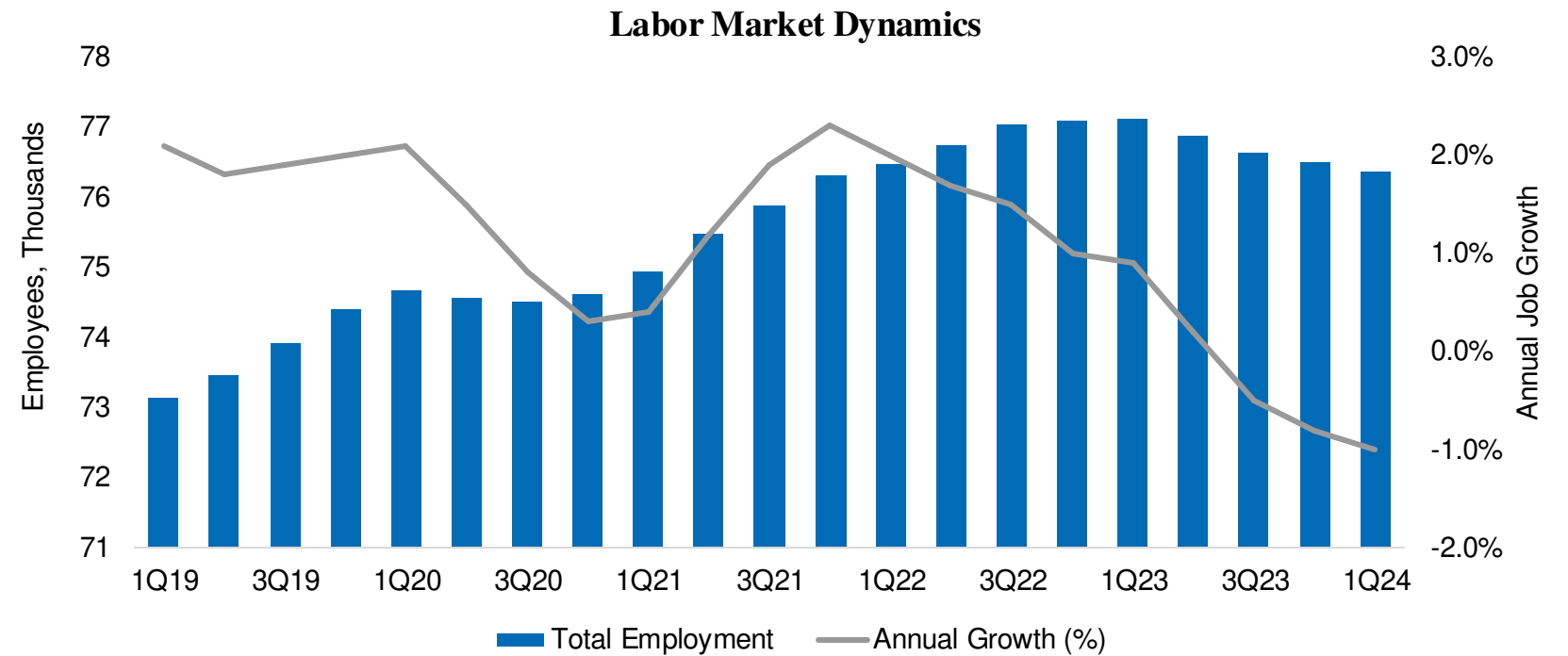
1. Rice University
2. University of Houston

### Third Quarter Stats

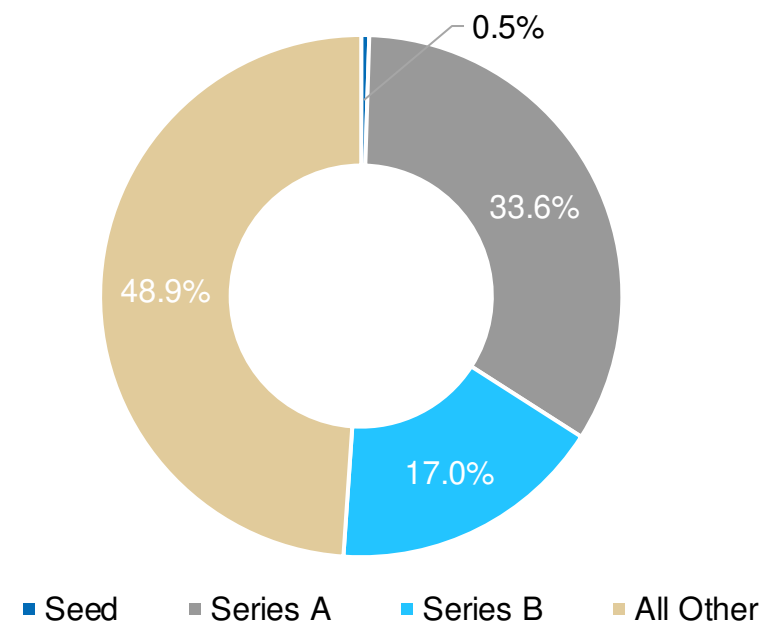


# Chicago

- The Chicago life science market was quiet again this quarter in terms of sales and leasing transaction volume. But in an adjacent industry Medline Industries signed two lease transactions to expand by more than 300,000 SF in the Chicago Metro. The first lease is to triple its current size at the Merchandise Mart downtown, adding 110,000 SF. The firm will now occupy 161,000 SF at The Mart. In the suburbs the firm signed a lease to take 210,000 SF at the former Astellas building in the Northern Suburbs. This new space will be in addition to its global headquarter campus just four miles east of the new buildings.
- Sterling Bay put its Lincoln Park Bioscience Center in Lincoln Park on the market. The property is 41% leased with its main tenants being Evozyne and Cyclopure. While there is no sales price listed Sterling Bay has invested more than \$19 million in build-out-costs, modernizations and renovations.



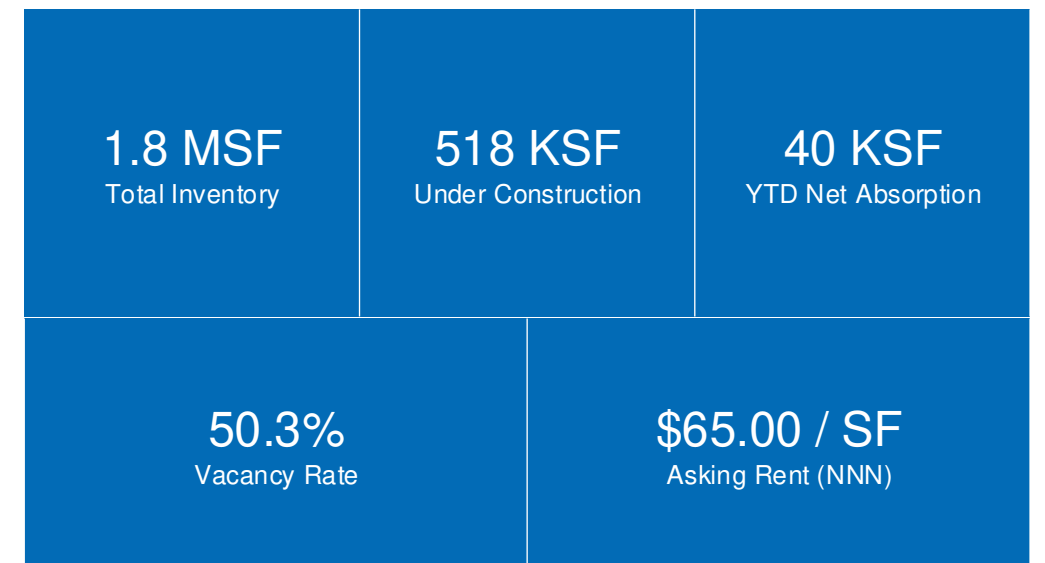
### YTD 2024 Venture Capital Funding



### Top Tech Transfer Universities

- Northwestern University
- University of Chicago
- University of Illinois at Chicago

### Third Quarter Stats



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