TRANSWESTERN

COMMERCIAL REAL ESTATE

U.S. MARKET | LIFE SCIENCES

Q1 2024

TRANSWESTERN

Contents

THE VIEW FROM HERE

Lack of funding in 2023 combined with record levels of new supply means fundamentals remain challenged

Key capital sources for occupiers have improved dramatically since last year, which should fuel new demand

A significant slowdown in construction starts foreshadows a rebalancing of fundamentals over the next few years

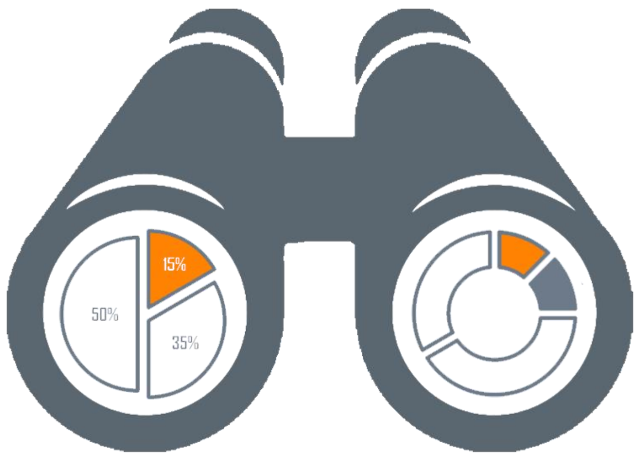
NET ABSORPTION
(356,996)
Driven by western markets

VACANCY RATE
14.62%
Fueled by new inventory

NATIONAL INVENTORY
229.4 MSF
Over 10 Markets

ASKING RENT
$54.31
Annual PSF

NATIONAL MARKET OUTLOOK



The life sciences industry experienced a strong start to 2024. Industry fundamentals and drivers are showing signs of strengthening, as venture funding and capital markets begin to bounce back after a turbulent 2023. The forces behind rising vacancy rates, asking rates and forecasts became more transparent, removing a layer of risk. The growing science ecosystem fueling the surge in development is going through its own cycle, with a diverse set of challenges. The relationship between the real estate assets and the science are dependent on each other's success.

The renewing of public market optimism has yielded 13 initial public offerings (IPO) in Q1 of 2024, a stark difference between the three in Q4 2023. In all, the entirety of capital raised in 2024 IPOs have equaled the capital raised in 2023. This blockbuster reversal in IPO performance has the venture funding community hopeful that the funding cycles will continue, more transparency in future performance brings increased activity. Venture funding in Q1 2024, including medical device development yielded $8.8B. The previous quarters brought less than half of the Q1 total, a signaling that demand for investment is on the rise. M&A activity continues to be an alternative funding source for small cap and startups. Large cap firms continue to expand their portfolio and fortify supply chains.

The life science real estate market continues to perform well, given complex headwinds to the sector. Commercial real estate as whole is experiencing a downturn; however, life science assets have faired better than other asset class. The strength the life science assets have shown over the last 18-months is a testament to their ability to hold value, even with hardships for tenants and landlords. Large institutional owners of life sciences buildings have noted the inter-tenant demand is driving their current leasing activity, allowing landlords to shuffle tenants within their portfolio. All in all, the life sciences inventory continues to grow at a rapid pace, supply and demand has yet to equalize. Q1 2024 has been a great start, and industry stakeholders continue to highlight the positives supporting the sector. The biggest hurtle that the life sciences market has to overcome is the inventory surplus that is set to deliver in the next 12 months; once that supply is digested a rebalance can be achieved.

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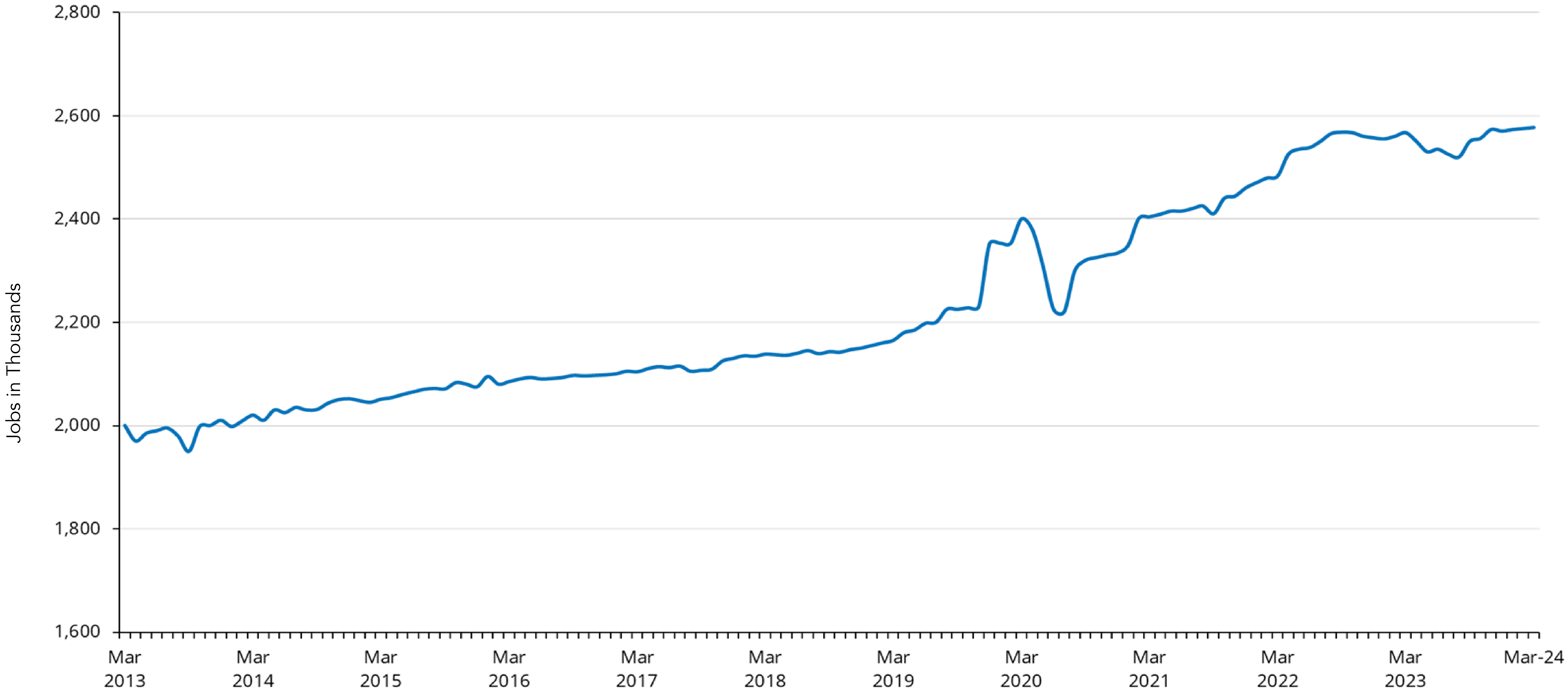
LIFE SCIENCES EMPLOYMENT

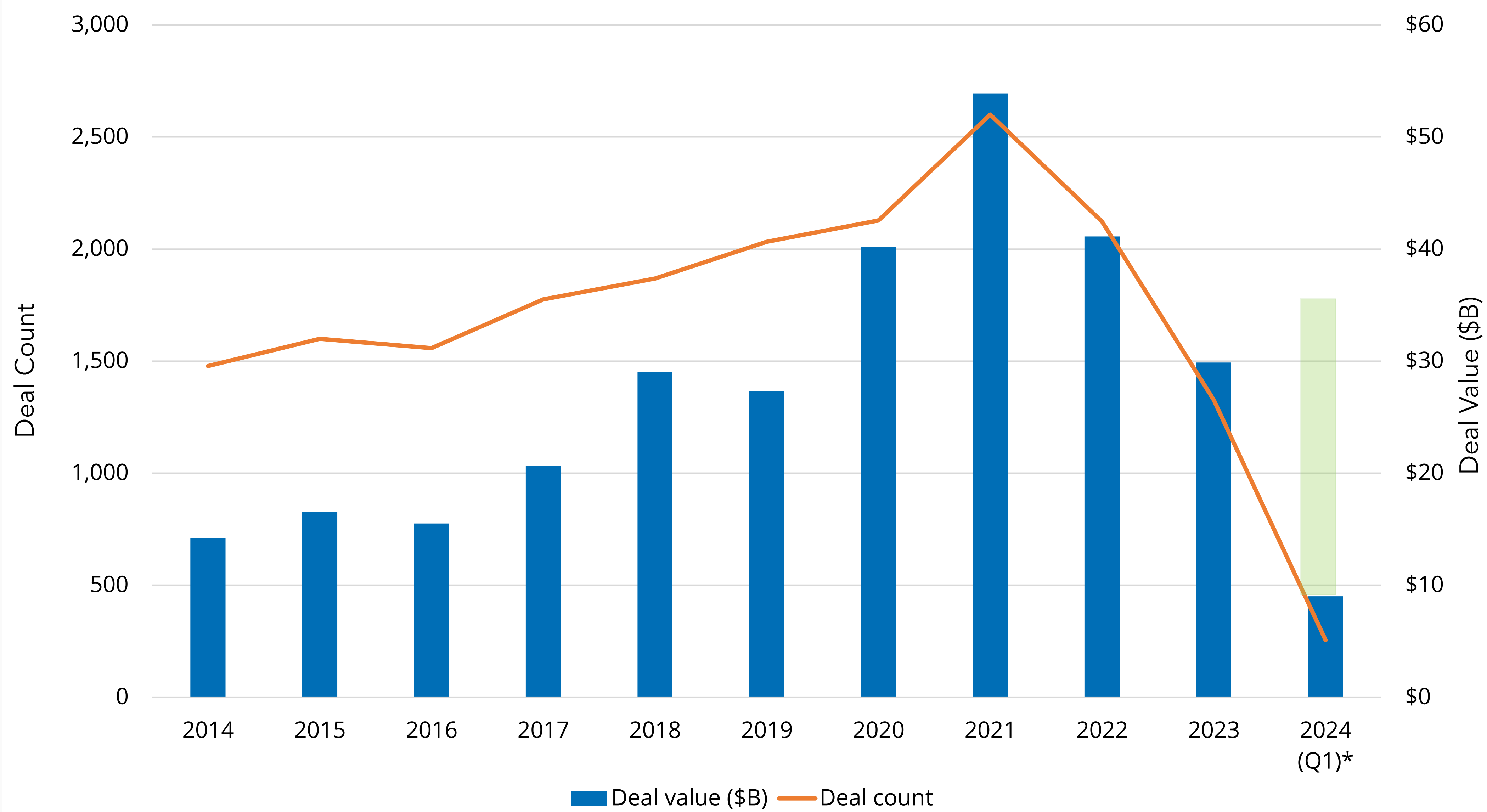


- Life sciences employment has seen a continued positive trend since early 2013, adding a total of almost 875,000 jobs in the last decade. Industry employment has grown almost 20% in the last 5-year period, beating other areas of the economy.
- Headwinds facing employment is the adoption of AI and evolving trends towards outsourcing research and initial pilot manufacturing. Additionally, recent M&A activity from large cap firms, who have acquired smaller firms may chose to streamline core operations; using the parent's company efficiency to bolster the acquired firm's operations and progress. Media headlines have highlighted the sector's layoffs and consolations; yet in Q1 2024 the life sciences sector added just shy of 1,000 jobs.

KEY VENTURE FUNDING POINTS

- Venture-backed funding in Q1 totaled $8.8B. A noteworthy, sustained amount over pre-pandemic levels and trending positive off 2023 lows.
- Industry sentiment continues to be optimistic, with life sciences and medical technology remaining top industries for private deployment of investment capital.
- Venture firms can start to quantify returns and digest current evaluations given the uptick recent IPOs, providing clarity and security.
- Funding continues to be weighted towards later stage companies with proven science, seen to be less risky.
- The number of deals completed in Q1 2024 falls lower than previous years, yet the amount per deal is larger. Signaling defensive investments are favored, over speculative.
- The weight of an election year still leans on some venture firms. Policy influences could shift with a change in administrations, in all branches of the government.

VC DEAL & FUNDING VOLUME



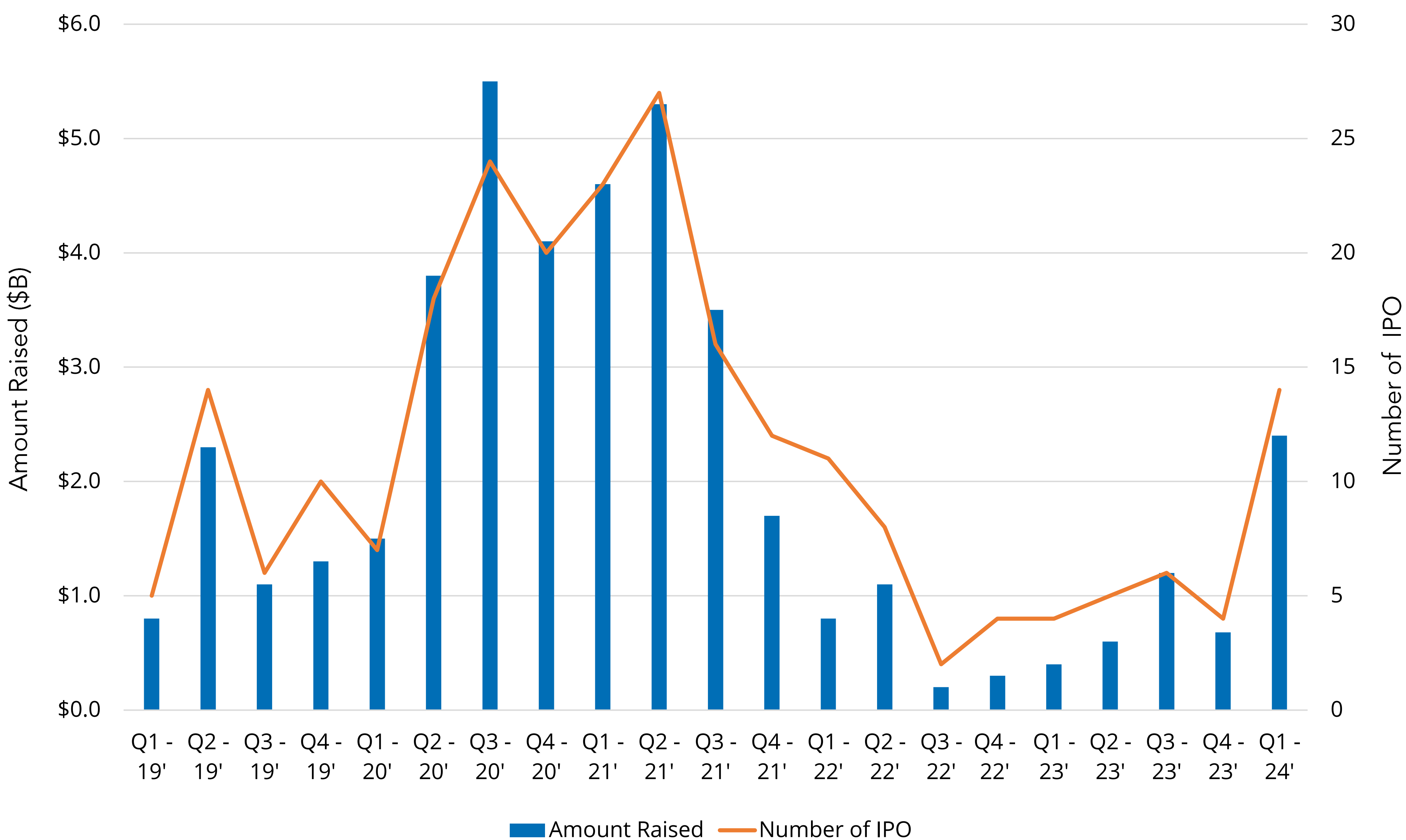
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 (Q1)
Deal value ($B)	$14.23	$16.53	$15.50	$20.67	$29.01	$27.34	$40.21	$53.90	$41.11	$29.89	$8.8
Deal count	1,478	1,599	1,558	1,775	1,868	2,032	2,128	2,600	2,122	1,491	236

Source: TW Research, Pitchbook *Green indicates annual projection

IPO MARKET SUMMARY

- The public markets play a critical role in the funding cycles within the life science industries. For the stakeholders and company, it allows talent and investors a method of receiving a return on their investment and the company receives a boost of capital to help the underlaying science thrive in the marketplace.
- The pull back in IPOs during late 2022 and 2023 was a significant headwind to the sectors success. 2023 saw only 20 firms reaching IPO, and of those only few saw $100M levels. In stark contrast, 2024 started strong with a surge in investment, with 13 IPOs in Q1.
- Firms who did go public in 2022 and 2023 have seen an uptick in activity, as investors are looking for firms that survived the downward dip and may yield a favorable return with science milestones being achieved in the future.

LIFE SCIENCES IPO ACTIVITY



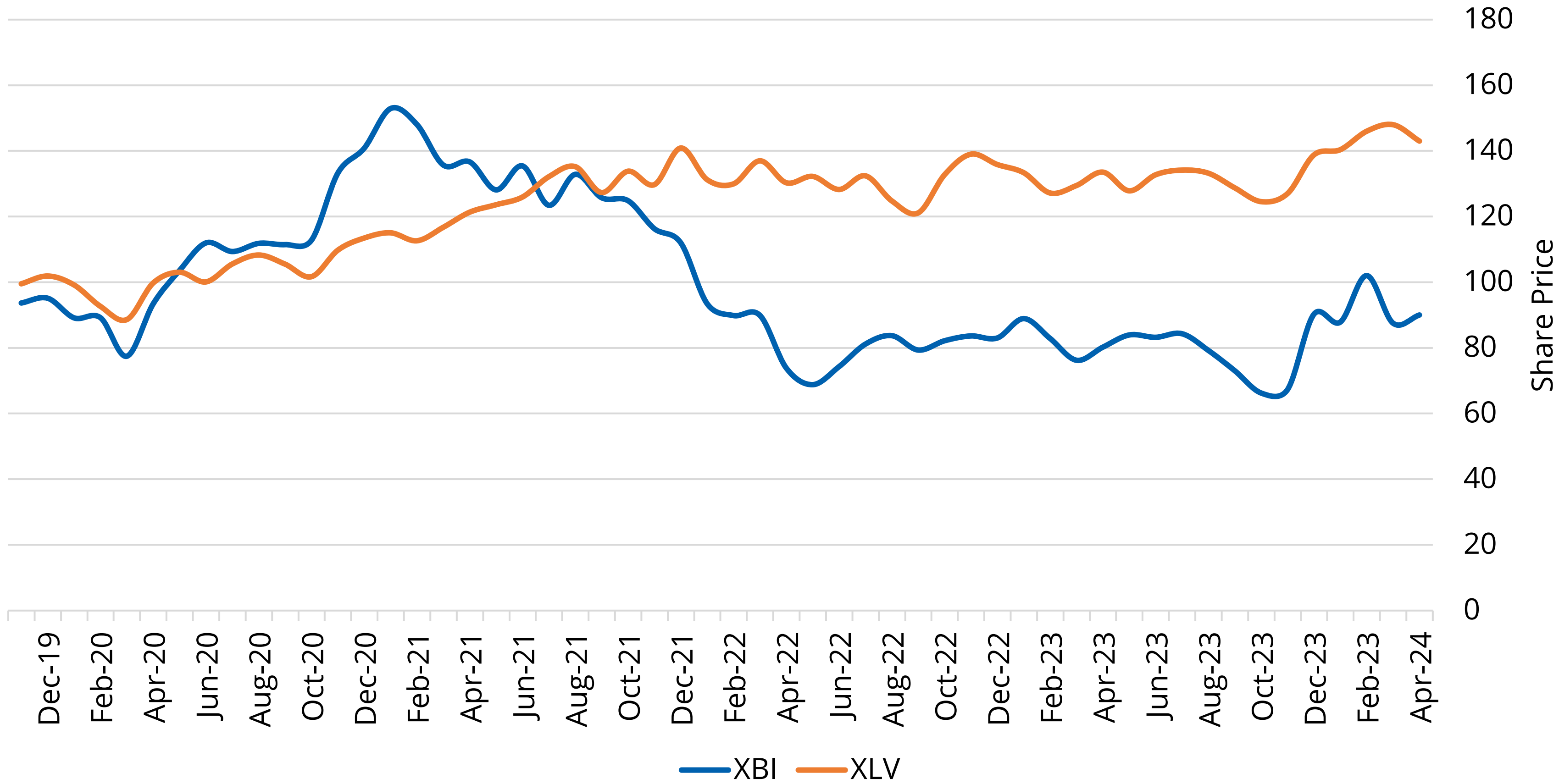
Source: TW Research, Pitchbook & NASDAQ

- Health Care Select Sector SPDR Fund (XLV) – Broad base of healthcare companies, including pharmaceuticals, healthcare equipment, devices and services. Considered to be stable, bellwether names representing the entirety of the sector's exposure.

- SPDR S&P Biotech ETF (XBI) – Life sciences and biotech focused, driving innovation for the healthcare industry. Considered to be less stable, representing novel sciences still in research and development phases.

- The similar trend between XLV and XBI ended in 2021, with XBI experiencing a sharp correction through 2022. The second half of 2023 has seen a noteworthy uptick in fund values. 2024 has seen a stabilization of share price, returning to being more correlated.

MARKET FUND COMPARISION



RECENT LIFE SCIENCES IPO – Q1 2024

COMPANY	FOCUS	IPO DATE	PROCEEDS	IPO PRICE	CURRENT PRICE
CG Oncology, Inc.	Urologic Oncology	1/24/24	$380M	$19.00	$36.27
Neruoscience, Inc.	Precision Medicine – Neurology	1/26/24	$130M	$4.00	$8.84
ArriVent BioPharma, Inc.	Oncology	1/27/24	$175M	$18.00	$17.23
FibroBiologics, Inc	Fibroblast-based Therapies	1/31/24	$40M	$30.00	$8.02
Fractyl Health, Inc	Metabolic Diseases	2/2/24	$110M	$15.00	$6.51
Alto Neuroscience, Inc	Central Nervous System Diseases	2/2/24	$147M	$16.00	$14.22
Kyverna Therapeutics, Inc.	Autoimmune Diseases	2/8/24	$319M	$22.00	$15.25
Telomir Pharmaceuticals	Novel Small Molecule – Stem Cells	2/9/24	$7M	$7.00	$6.20
Metagenomi, Inc	Gene Editing	2/9/24	$95M	$15.00	$6.32
Chromocell Therapeutics	Non-opioid Therapeutics	2/16/24	$6.6	$6.00	$1.77
Astra Labs, Inc	Integrated Biologics	3/20/24	$713M	$36.00	$76.96
Boundless Bio, Inc	DNA Directed Therapies	3/28/24	$100M	$16.00	$9.35
Contineum Therapeutics, Inc.	Small Molecule, Neroscience	3/28/24	$110M	$16.00	$14.09

Source: TW Research, Pitchbook & NASDAQ

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NIH FUNDING HIGHLIGHTS

- The 2024 budget for NIH funding was $47.1B, with $1.9B in additional provisions. Fiscal Year 2025 has a proposed budget $51.7B.

- The established academic institutions with noteworthy research arms continue to remain the top recipients of NIH grants. Academic institutions support their post-grad ecosystem with increased investment in incubator and graduation space.

Additional governmental institutions that contribute to the advancement of life sciences:

Department of Energy (DOE)
Research budget $8.1B

Federal Drug Administration (FDA)
Research budget $1.2B

National Institute of Allergy and Infectious Diseases (NIAID)
Research budget $5.1B

YTD 2024 NIH FUNDING I TOP RECIPIENTS

ORGANIZATION	CITY	STATE	AWARDS	FUNDING
Research Triangle Institute	RTP	NC	14	$304,874,874
Johns Hopkins University	Baltimore	MD	406	$226,580,579
University Of California, San Francisco	San Francisco	CA	478	$214,814,535
University Of Pennsylvania	Philadelphia	PA	454	$212,582,010
University Of Michigan At Ann Arbor	Ann Arbor	MI	406	$189,369,007
University Of North Carolina Chapel Hill	Chapel Hill	NC	355	$176,678,451
Massachusetts General Hospital	Boston	MA	337	$176,678,451
University of California Los Angeles	Westwood	CA	277	$174,947,825
University of Pittsburgh	Pittsburgh	PA	386	$174,086,497
Washington University	Saint Louis	MO	381	$172,201,142
Yale University	New Haven	CT	365	$168,535,224
Stanford University	Stanford	CA	360	$167,013,900
Fred Hutchinson Cancer Center	Seattle	WA	89	$164,101,634
Duke University	Durham	NC	325	$158,572,419
University of California, San Diego	La Jolla	CA	323	$157,357,252
Columbia University Health	New York	NY	301	$153,060.166

Source: TW Research, NIH, DOE, FDA & NIAID

NATIONWIDE TOP OCCUPIERS

Source: TW Research, ZoomInfo & CoStar

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KEY MARKET POINTS

- Boston's construction pipeline starts to decline, with project starts at an all-time low.
- The robust construction pipeline continues to bring new inventory at a rapid pace, which outpaces leasing activity. Q1 brought 2MSF to the market's inventory – with only an average of 23% preleased.
- 18 MSF of development projects continue to be permitted; with a noteworthy uptick in new proposed projects.

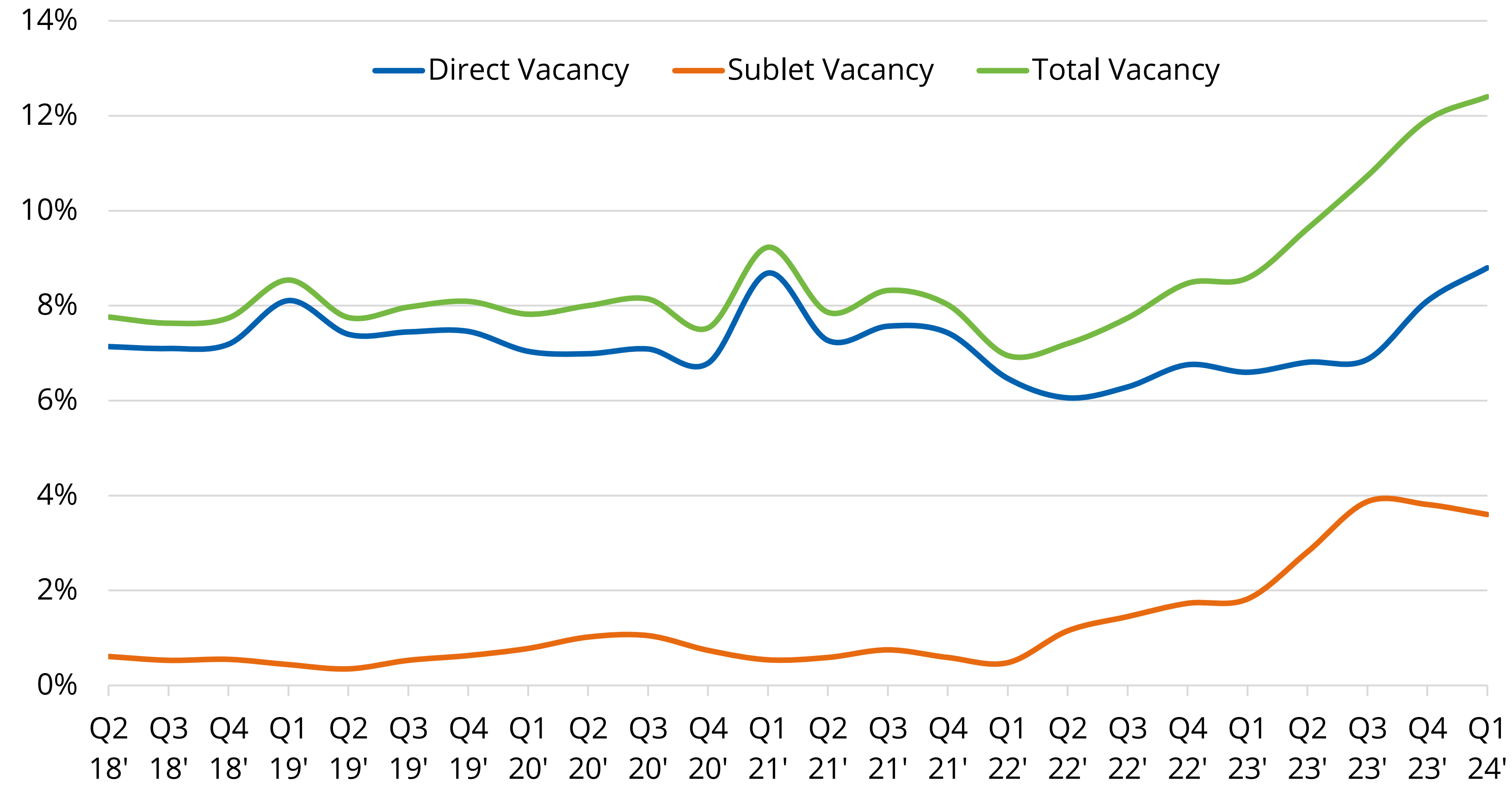
TRENDLINES	Q1 2024	Q1 2023	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	67.96	64.85	⬆	⬆
NET ABSORPTION (THOUSANDS SF)	122,250	386,900	⬇	⬌
VACANCY RATE	13.20%	11.21%	⬆	⬆
UNDER CONSTRUCTION (MSF)	19.36	21.64	⬇	⬇
ASKING RENT, NNN (PSF)	$57.80	$53.75	⬆	⬌
YTD NIH STATE GRANTS (BILLIONS)	$.968	$.919	⬆	⬌

MARKET OVERVIEW

Boston's resilience is an attest to it being the largest life sciences market in the United States, nearing 70MSF of total inventory. Local supply and demand dynamics are still being stretched as new inventory keeps the landscape competitive. Direct space vacancy rates continue to rise with sublease space experiencing a leveling trend. Major market stakeholders continue to expand, most recently Takeda Pharmaceuticals renewing/expanding by 225,000 SF in East Cambridge.

An uptick in future developments have resurged in the recent quarter, two large of note. Cell Signaling Technology recently acquired a 49.5-acre parcel in Manchester-by-the-sea. Additionally, GFI Partners acquired a 33.5-acre parcel for redevelopment of the former Grafton State Hospital.

TOTAL VACANCY RATE

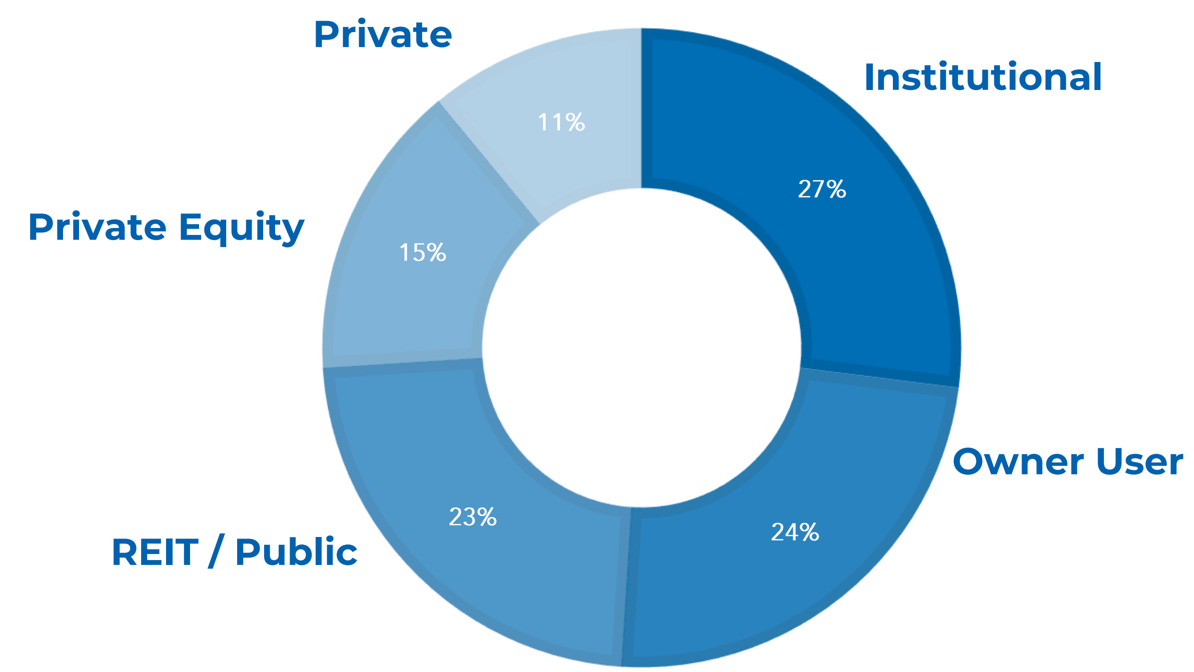


Source: TW Research. CoStar, NIH

LOCAL NIH FUNDING | YTD 2024

ORGANIZATION	AWARDS	FUNDING	CITY
Massachusetts General Hospital	337	$176,678,451	Boston
Brigham And Women's Hospital	245	$123,615,553	Boston
Boston Children's Hospital	160	$79,732,071	Boston
Dana-Farber Cancer Institute	95	$60,828,579	Boston
Harvard School of Public Health	51	$56,933,086	Boston
University of Massachusetts Medical School	51	$56,933.086	Worcester
Boston University Medical Campus	97	$54,906,054	Boston
Harvard Medical School	113	$44,747,915	Boston
Beth Israel Deaconess Medical Center	84	$39,224,412	Boston
Massachusetts Institute of Technology	70	$28,220,326	Cambridge

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

ALEXANDRIA
Blackstone

LEASE I Q1 2024

TENANT	TYPE	ADDRESS	SIZE	MARKET
Takeda Pharmaceuticals	Renewal	75-125 Binney St	225,000	Cambridge
Forsyth Institute	New	100 Chestnut St	76,750	Somerville
BPGBio	New	300 Third Ave	70,000	Waltham
TIAX, LLC	Renewal	300 Jubilee Dr	46,250	Bedford
ANDE	Renewal	266 2nd Ave	46,000	Bedford
City Therapeutics	New	55 Cambridge Pkwy	37,000	Boston
Lyra Therapeutics	New	362 Seventh St	24,000	Waltham

SALE I Q1 2024

ADDRESS	TYPE	SIZE	PRICE	MARKET
640 Memorial Drive	Office	242,500	$223,800,000	Boston

Source: TW Research. CoStar
*Portfolio sale

KEY MARKET POINTS

- Direct availability remains the primary driver of the of the vacancy rate, as sub-lease space remains limited.
- The development pipeline consists of four active projects.
- Chicago's inventory is anchored by owner users.
- Two local developers have listed excess land near recently competed developments, suggesting a pull back on expansion.

TRENDLINES	Q1 2024	Q1 2023	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	12.00	11.90	↑	↑
NET ABSORPTION (THOUSANDS SF)	58.10	(100)	↑	↑
VACANCY RATE	11.10%	10.61%	↑	↑
UNDER CONSTRUCTION (THOUSAND SF)	810	940	↓	↑
ASKING RENT, NNN (PSF)	$45.80	$40.55	↑	↑
YTD NIH STATE GRANTS (BILLIONS)	$.382	$.380	↑	↓

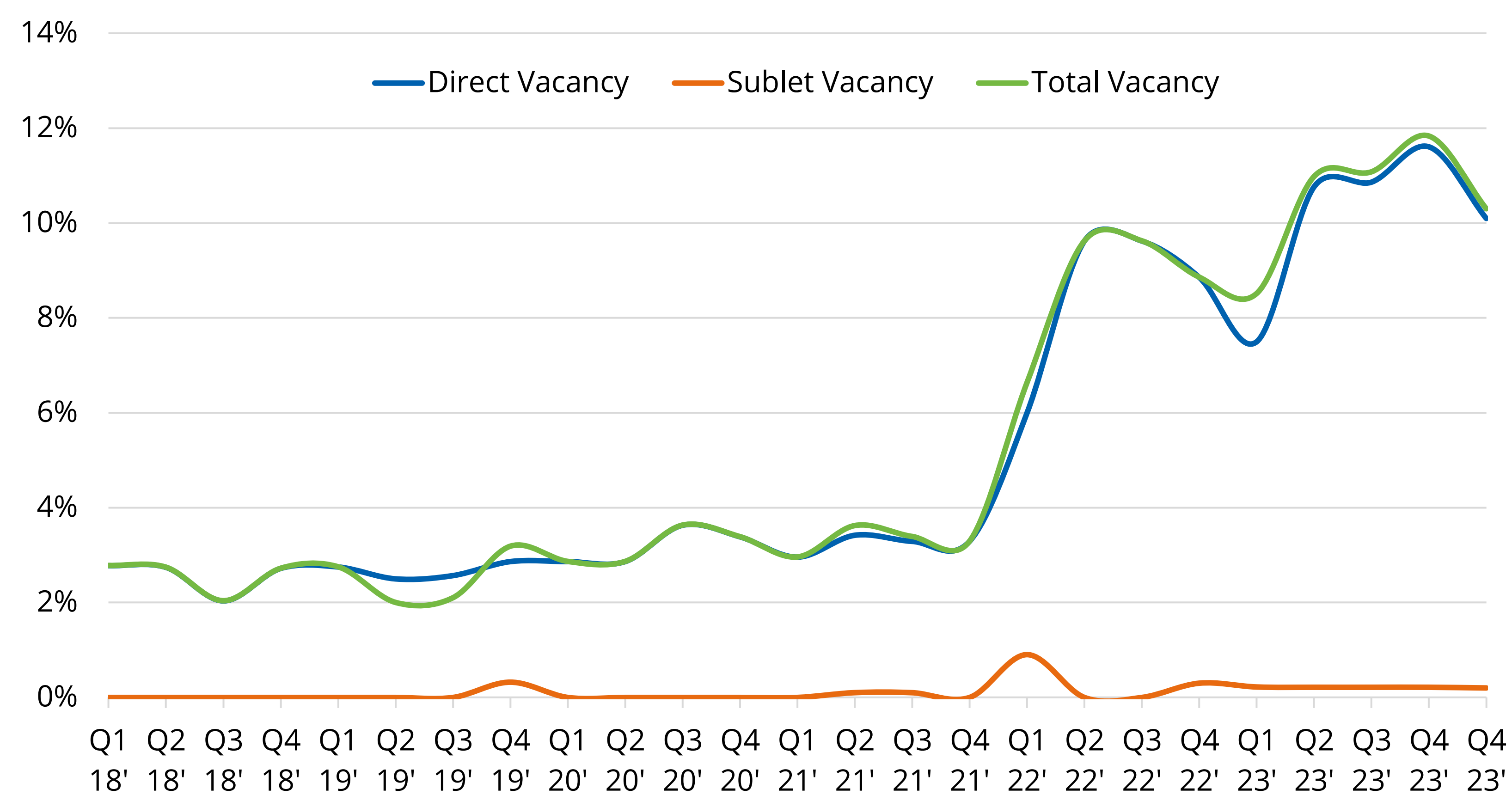
MARKET OVERVIEW

Chicago is rapidly becoming an established market for life sciences companies, anchored by owner-users, totaling seven million square feet. The remaining four million square feet of leased inventory is split between the North Chicago and Chicago's CBD. Close to 1.3 MSF has been added to the local inventory since 2018.

Trammell Crow Co. recently released the news of their latest development; a 1.8 MSF mixed use campus, consisting of four buildings totaling 660,00K of lab and office space. Conversely, Sterling Bay recently listed their adjoining properties, next to their Lincon Yards development.

The local market contains four incubators: Portal Innovations, mHub, Helix51 and Chan Zuckerberg Biohub Chicago. These spaces are reported to be at near capacity and signal the budding innovation in the local market.

VACANCY RATE

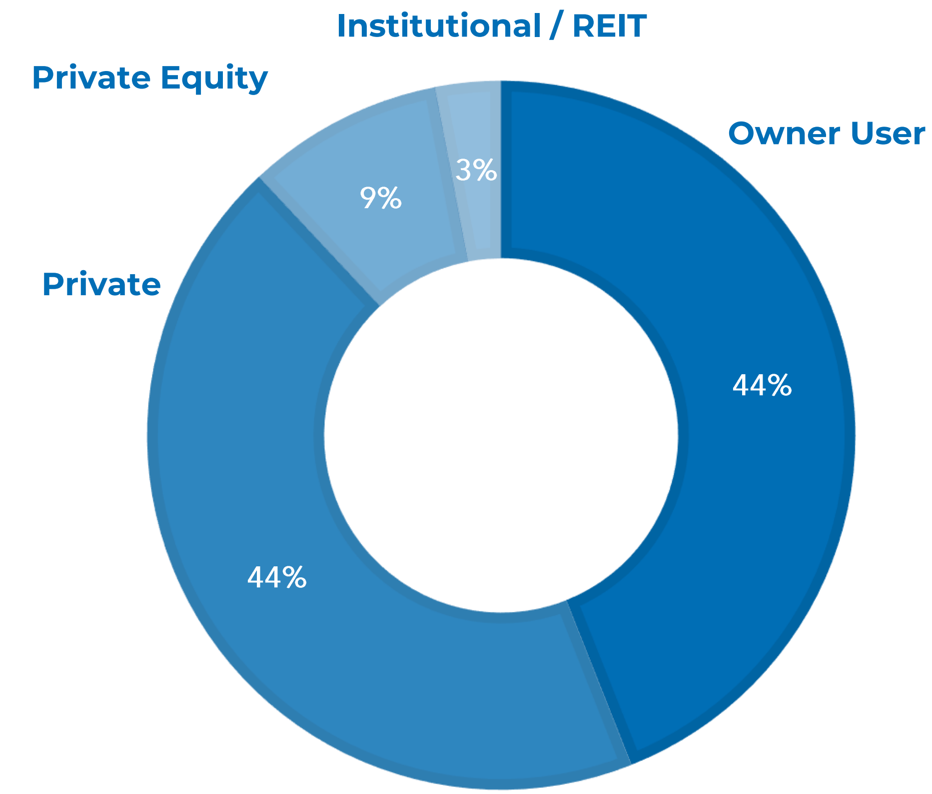


Source: TW Research. CoStar

LOCAL NIH FUNDING | YTD 2024

ORGANIZATION	AWARDS	FUNDING	CITY
Northwestern University	220	$99,529,081	Chicago
University Of Chicago	114	$60,823,094	Chicago
University Of Illinois At Chicago	122	$47,899,869	Chicago
National Opinion Research Center	4	$34,147,852	Chicago
University of Illinois at Urbana-Champaign	60	$18,274,959	Champaign
Northwestern University	35	$12,845,876	Chicago
Lurie Children's Hospital	23	$12,725,604	Chicago
Loyola University Chicago	30	$12,279,590	Maywood
Alliance Foundation	20	$6,922,120	Chicago

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

Sterling Bay

Trammell Crow Company

SALE | Q4 2023

ADDRESS	TYPE	SIZE	PRICE	MARKET
1101 Arnold Street	Manufacturing	350,000	$28,000,000	Chicago

LEASE | Q1 2024

TENANT	TYPE	ADDRESS	SIZE	MARKET
Mattiq	New	400 N. Aberdeen	17,450	Chicago

DEVELOPMENT SPOTLIGHT: HYDE PARK LABS

302,388 RSF
Total Square Footage

13 Stories
14' – 15' Ceiling Heights

35,000 RSF
Floor Plates

9 Stories
Dedicated Lab Space

40,000 RSF
Amenity Space

125 Spaces
Underground Parking

Slated to be delivered June 2024

Trammell Crow Company & Beacon Capital Partners

Source: TW Research, CoStar. Beacon Capital Partners & NIH

KEY MARKET POINTS

- Houston's life science growth continues to gain momentum, anchored by the renowned Texas Medical Center.
- Preleasing continues to tick upward, topping 85%
- Houston continues to receive the largest share of NIH funding in the state.
- Increased activity between research and healthcare entities, looking to embrace joint ventures.
- The employment talent pool is robust, backed by top tier local academic institutions.

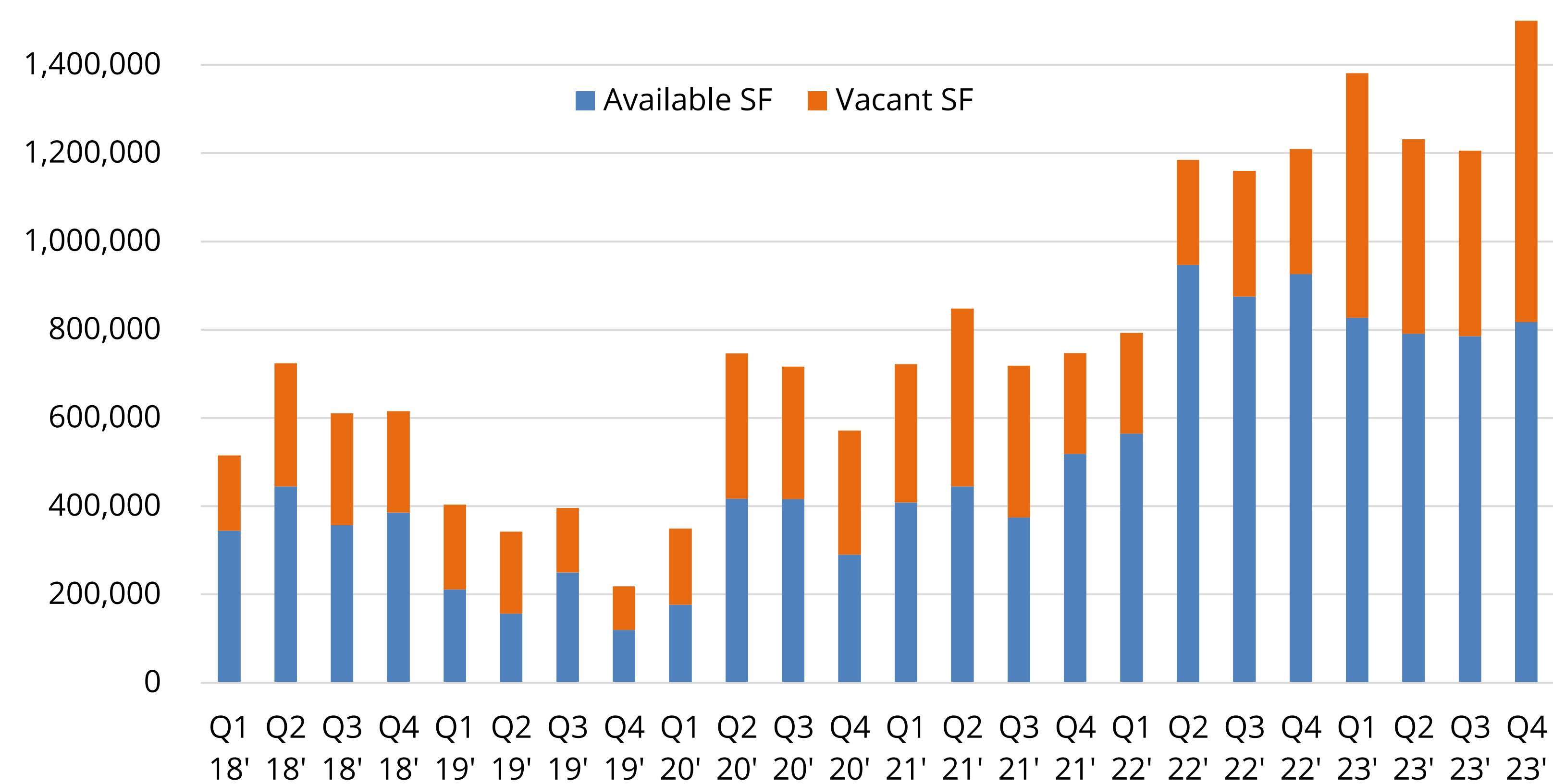
MARKET OVERVIEW

The life science real estate market in Houston continues to expand, remaining stable amidst dynamic times. Centered around Houston's Texas Medical Center (TMC), the local life science ecosystem is robust and fosters collaboration; supported by top tier academic institutions that aid innovation and supply a growing talent pool. Additionally, Houston has strong industry partnerships, BIOHouston helps to connect the local life sciences community.

Recently, Rice University initiated their Launchpad accelerator, aiming to give yet another boost to the Houston life sciences ecosystem. The existing local accelerators continue to sow the seeds for future growth and will help secure this growing life sciences hub. Recently delivered developments have shown strong preleasing, boasting close to 85%. When compared to other life sciences hubs around the nation, Houston's market statistics continue to forecast a healthy market, prime for continued growth.

TRENDLINES	Q1 2024	Q1 2023	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	4.41	3.43	↑	↑
NET ABSORPTION (THOUSANDS SF)	(36.11)	67,18	↓	↑
VACANCY RATE	18.61%	10.88%	↑	↑
UNDER CONSTRUCTION (THOUSAND SF)	1.4M	981	↑	↓
ASKING RENT, NNN (PSF)	$47.24	$41.29	↑	↑
YTD NIH STATE GRANTS (BILLIONS)	$.855	$.832	↑	↑

AVAILABLE INVENTORY

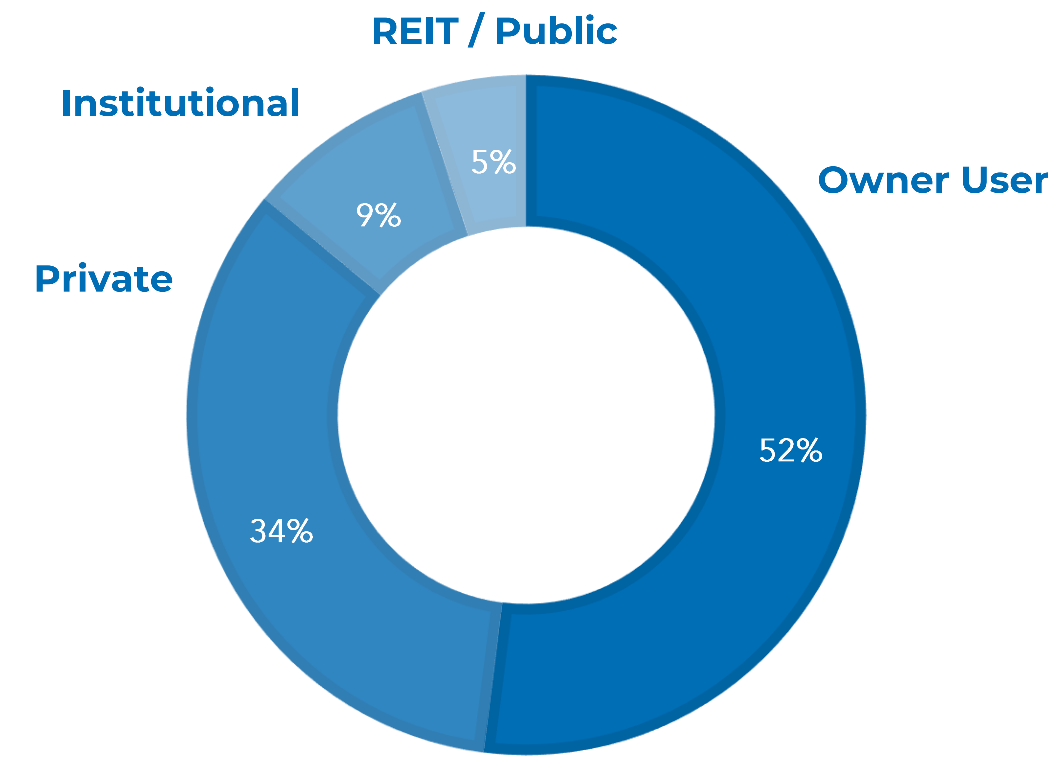


Source: TW Research. CoStar

LOCAL NIH FUNDING | YTD 2024

ORGANIZATION	AWARDS	FUNDING	CITY
Baylor College Of Medicine	195	$83,996,373	Houston
University Of Texas – Southwestern Medical Center	199	$83,220,974	Dallas
University Of Texas – MD Anderson Cancer Center	125	$52,625,105	Houston
University Of Texas – Health Science Center	119	$48,971,667	Houston
University of Texas – Health Science Center	92	$34,801,774	San Antonio
University of Texas – Austin	82	$29,778,804	Austin
University of Texas Medical Galveston	50	$24,373,415	Galveston
Methodist Hospital Research Institute	26	$11,950,659	Houston
Texas A&M University Health Science Center	29	$10,093,734	College Station
Texas A&M University	23	$9,395,355	College Station

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

TMC TEXAS MEDICAL CENTER

ATM

BEACON CAPITAL PARTNERS

LEASE | Q1 2024

TENANT	TYPE	ADDRESS	SIZE	MARKET
Omicron Electronics Lab	Renewal	9310 Kirby Dr	9,630	SW Houston
PranaX	New	Levit Green's Phase I	7,400	TMC
Drill Chem	Renewal	8701 New Trails Dr	5,470	Woodlands

DEVELOPMENT SPOTLIGHT: NIMBLE BIOSPACEST

McCord Development
Owner & Developer

67,200 RSF
Total Square Footage

6 cGMP Suites
Fully Turn-Key

March 2025
Anticipated Delivery

Source: TW Research, CoStar. NIH
*No recent sale activity.

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KEY MARKET POINTS

- New Jersey continues to be the cornerstone of manufacturing and long stablished pharmaceutical firms.
- Recent investment into second generation campuses renews interest from tenants, attracting talent and seeking efficiency.
- Mature transportation infrastructure aids to the stability and ongoing success, moreover with onshoring trends.

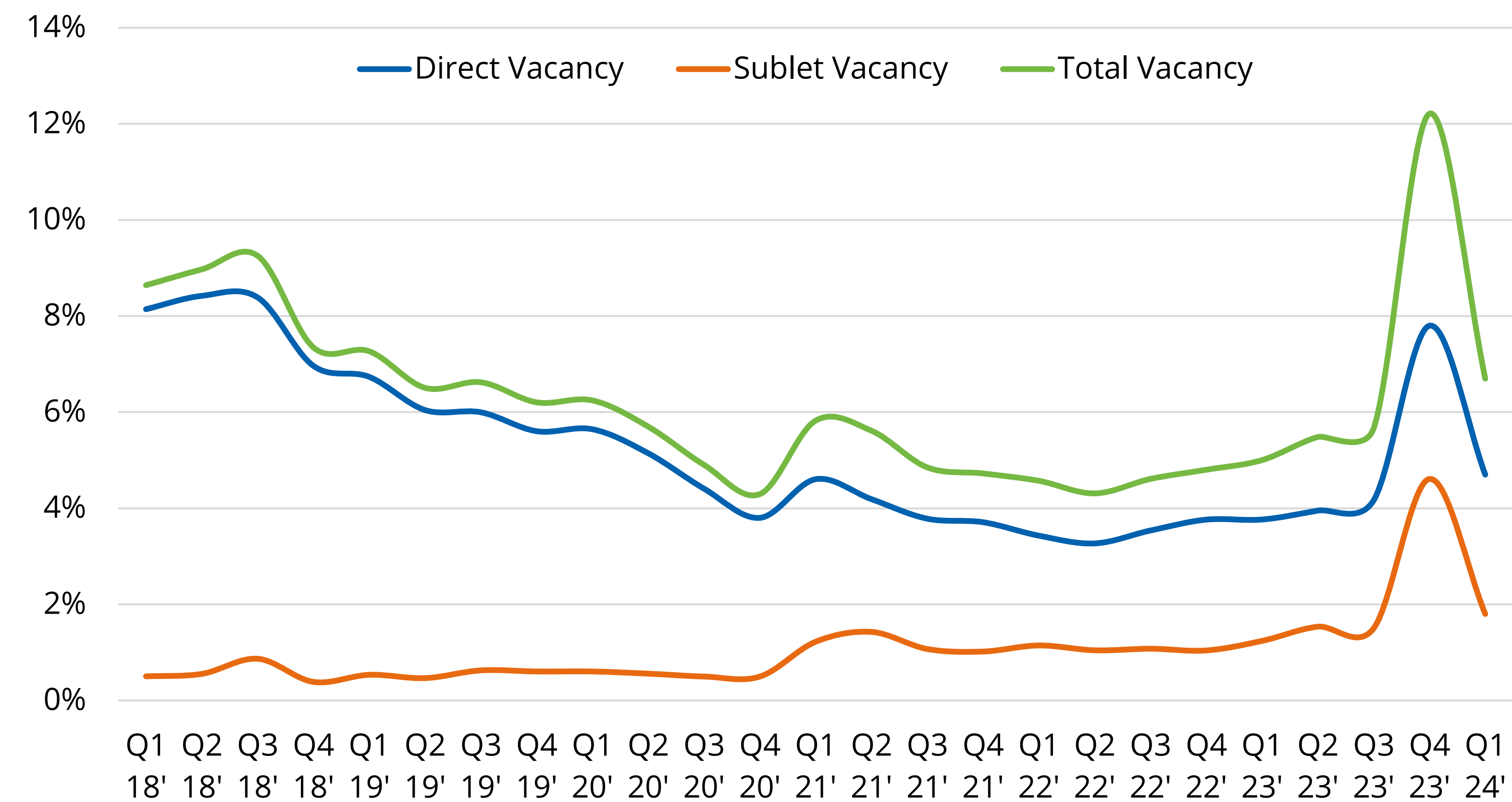
MARKET OVERVIEW

New Jersey known as the birthplace of immunotherapy and home to over 3,500 life sciences businesses employing 415,000 professionals. New Jersey consistently has a low number of deals, unlike activity from neighboring hubs; largely because New Jersey has larger campus style developments. The legacy manufacturing facilities are foundational to the regions ongoing success. Future adoption of efficient manufacturing practices are likely to continue bringing New Jersey into the light again, as onshoring becomes a growing concern. Most notability, Cellares who purchased a former Pfiser facility and recently raised $245M series C round. The firm aimed to open a first of a kind, Integrated Development and Manufacturing Organization (IDMO); outfitted for both pilot and industrial manufacturing.

The flight to quality seems to just be starting, as local firms look to trade outdated sprawling offices for more modern and efficient footprints. In 2023, two out of the top five office deals done were with life science firms seeking a newer space.

TRENDLINES	Q1 2024	Q1 2024	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	32.68	32.60	↔	↑
NET ABSORPTION (THOUSANDS SF)	(76.77)	(89.83)	↓	↑
VACANCY RATE	10.30%	11.45%	↑	↑
UNDER CONSTRUCTION (MSF)	1.70	1.27	↔	↔
ASKING RENT, NNN (PSF)	$36.45	$34.31	↑	↑
YTD NIH STATE GRANTS (MILLIONS)	$.243	$.305	↑	↑

VACANCY RATE



Source: TW Research. CoStar

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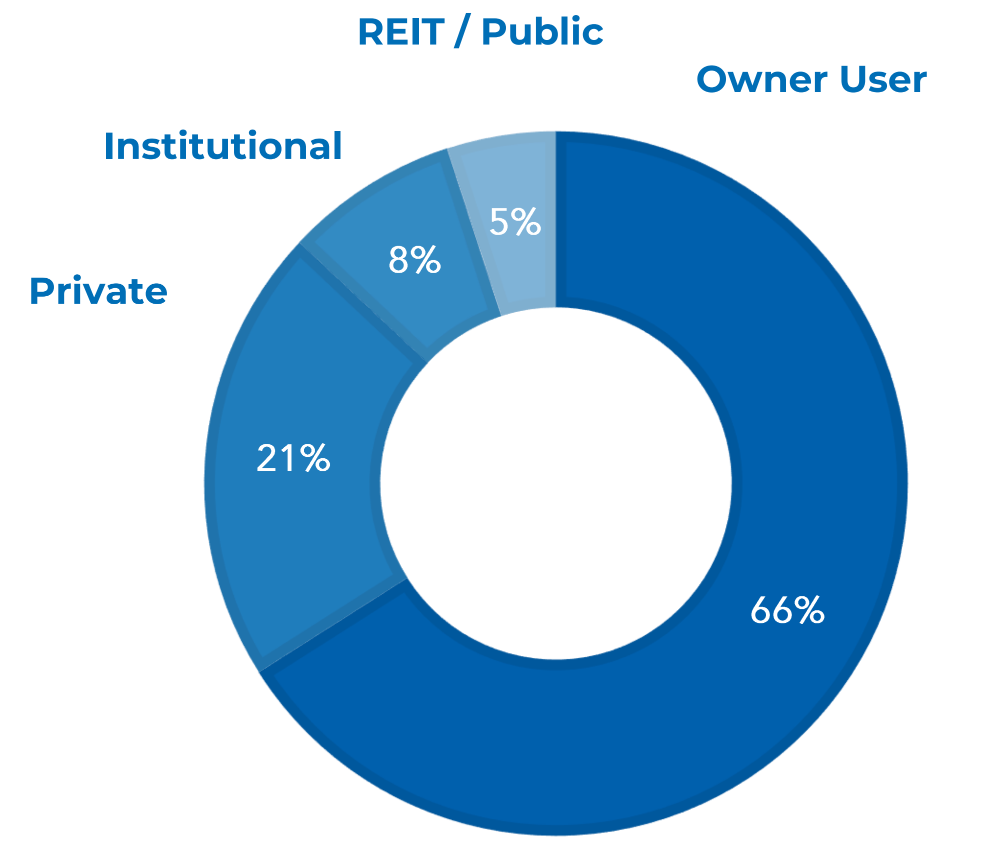
LOCAL NIH FUNDING | YTD 2024

ORGANIZATION	AWARDS	FUNDING	CITY
Rutgers Biomedical Health and Sciences	112	$49,077,660	Newark
Rutgers, The State University	26	$17,075,173	Piscataway
Princeton University	43	$14,707,338	Princeton
Hackensack University	9	$4,319,801	Hackensack
Rutgers (Newark)	5	$3,058,707	Newark
Cornell Institute Medical	7	$2,748,201	Camden
New Jersey Institute of Technology	7	$2,224,339	Newark
Kessler Foundation, Inc.	5	$1,813,074	East Hanover
ATUX ISKAY Group LLC	1	$1,688,077	Plainsboro
BIO Tillion, LLC	1	$1,091,042	Skillman

INVENTORY BUILDING OWNERSHIP



TOP OWNERS: MERCK Bristol-Myers Squibb Johnson & Johnson

LEASE | Q1 2024

TENANT	TYPE	ADDRESS	SIZE	MARKET
Genmab	Expansion	777 Scudders Mill Rd	135,000	Princeton
Regeneron	New	110 Allen Rd	126,500	Basking Ridge
Visikol Inc	Renewal	53 Frontage Rd	24,100	Hampton
Regen Lab USA	New	95 Greene St	15,850	Waterfront
HN International Group	New	72 Veronica Ave	15,000	Somerset
Avnos	New	-	14,000	Bridgewater
Advanced CTS Corp	New	73 Veronica Ave	11,500	Somerset

DEVELOPMENT SPOTLIGHT: BeiGene Campus

400,000 RSF
Total Square Footage

42 ACRES
Total Space

16,000 liters
Manufacturing Capacity

LATE 2024
Expected Delivery

Source: TW Research. CoStar, NIH
*No sales activity noted

KEY MARKET POINTS

- Leasing activity remains strong, as large corporations continue to renew large blocks of space.
- Vacancy rates continue to tick upward, yet a slower rate than the nation's average.
- Top academic institutions provide the market with a healthy qualified talent pool
- Developers are growing their suburban footprint.

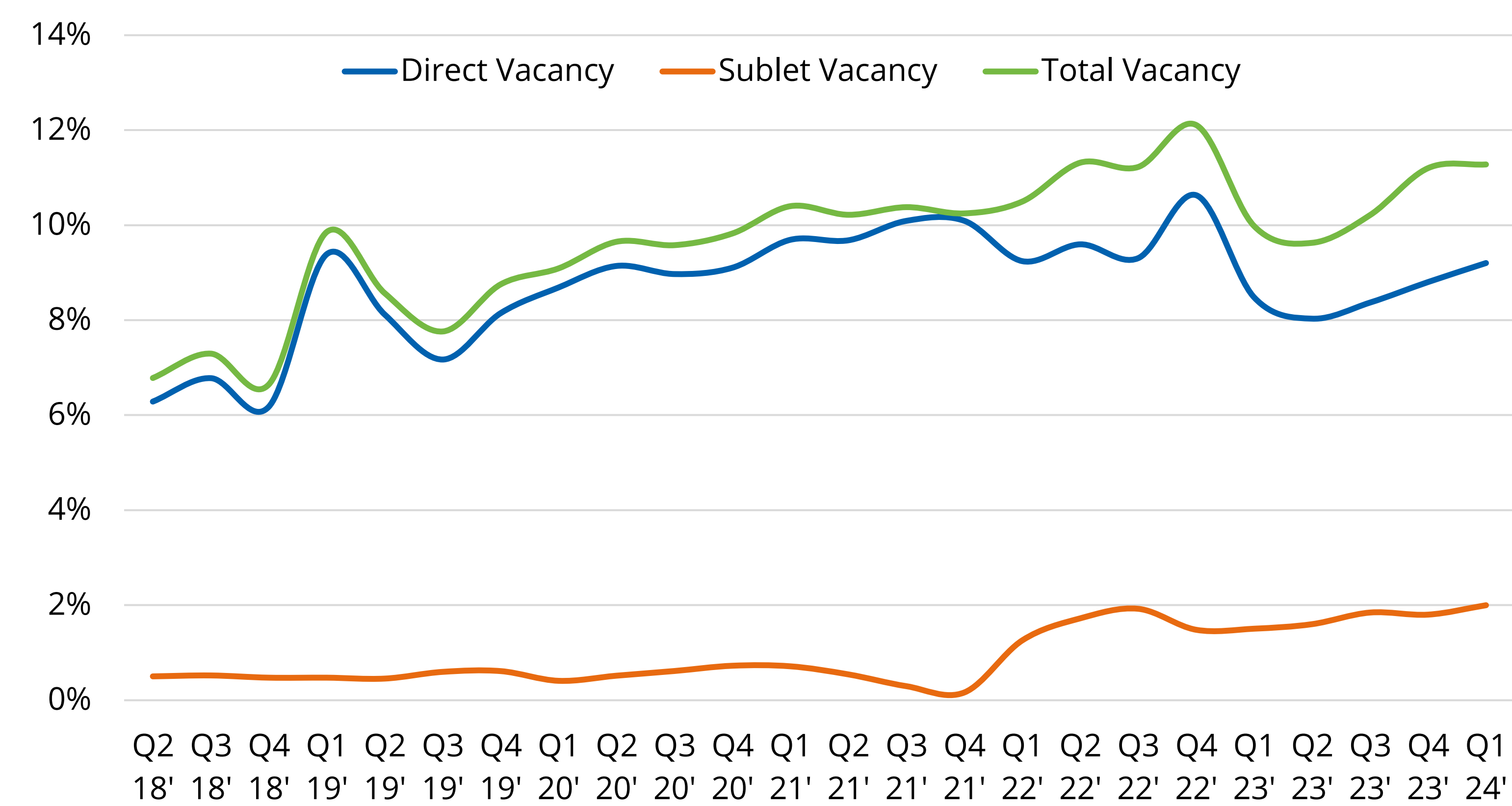
MARKET OVERVIEW

Philadelphia's life science market remains active, yet off historical highs seen 36 months ago. Leasing activity remains positive, as Dow Chemical renewed and expanded for 800,000 SF in Valley Forge. 2023 NIH funding in the region reached historical levels and is on track to yield a similar outcome throughout 2024. Cancer research seems to have been granted the bulk the public funding.

The demand drivers remain strong, with education and governmental support aiding the ecosystems success. Philadelphia has been chosen to be a regional technology and innovation center from the federal government. The city will be able to tap into federal grant funds to help boost local infrastructure around supporting the life science and technology industries.

TRENDLINES	Q1 2024	Q1 2023	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	23.19	22.47	↑	↑
NET ABSORPTION (THOUSANDS SF)	(204.1)	70.65	↓	↔
VACANCY RATE	14.20%	11.23%	↔	↔
UNDER CONSTRUCTION (MSF)	6.0	7.33	↓	↓
ASKING RENT, FULL SERVICE (PSF)	$41.34	$38.99	↑	↑
YTD NIH STATE GRANTS (BILLIONS)	$.673	$.484	↑	↑

VACANCY RATE

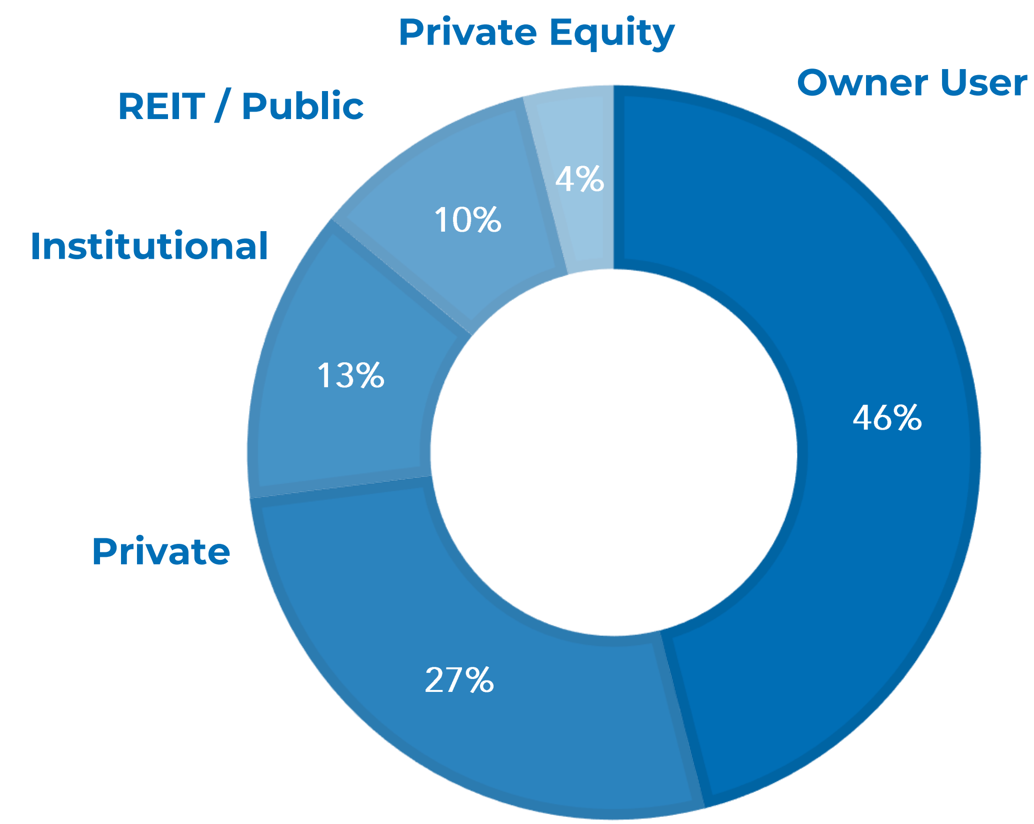


Source: TW Research. CoStar

LOCAL NIH FUNDING | TYD 2024

ORGANIZATION	AWARDS	FUNDING	CITY
University Of Pennsylvania	406	$189,242,761	Philadelphia
University Of Pittsburgh At Pittsburgh	386	$173,086,497	Pittsburgh
Children's Hosp Of Philadelphia	87	$40,033,900	Philadelphia
Pennsylvania State University	49	$24,136,743	University Park
Thomas Jefferson University	58	$23,335,264	Philadelphia
Pennsylvania State Univ Hershey Medical	48	$22,937,223	Hershey
Thomas Jefferson University	156	$65,331,419	Philadelphia
University of the Commonwealth	62	$19,936,712	Philadelphia
NRG Oncology Foundation, Inc.	2	$15,504,522	Philadelphia
Wistar Institute	19	$15,391,601	Philadelphia

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

WEXFORD SCIENCE&TECHNOLOGY, LLC
A WEXFORD EQUITIES COMPANY

MLP
MLP VENTURES, LLC

brandywine
REALTY TRUST

LEASE | Q1 2024

TENANT	TYPE	ADDRESS	SIZE	MARKET
Dow Chemical	Renewal	500 Arcola Rd	800,000	Valley Forge
Prelude Therapeutics	Renewal	175 Innovation Blvd	101,500	Wilmington
PhaseBio	New	1 Great Valley Pkwy	16,100	Malvern

SALE | Q1 2024

ADDRESS	TYPE	SIZE	PRICE	MARKET
1550 Valley Center Pkwy	Office	51,654	$2,424,000	Bethlehem
701 Veterans Circle	Office	155,200	$7,750,000	Warminster

Source: TW Research. CoStar, NIH

TRANSWESTERN

KEY MARKET POINTS

- Local market fundamentals remain stable with
- Large infrastructure investments continue from both public and private sources.
- Vacancy rates tick upward, as supply outpacing demand
- Strong start to FY 2024 NIH funding
- Large owner-user developments are forecasted to keep the spotlight on the local ecosystem

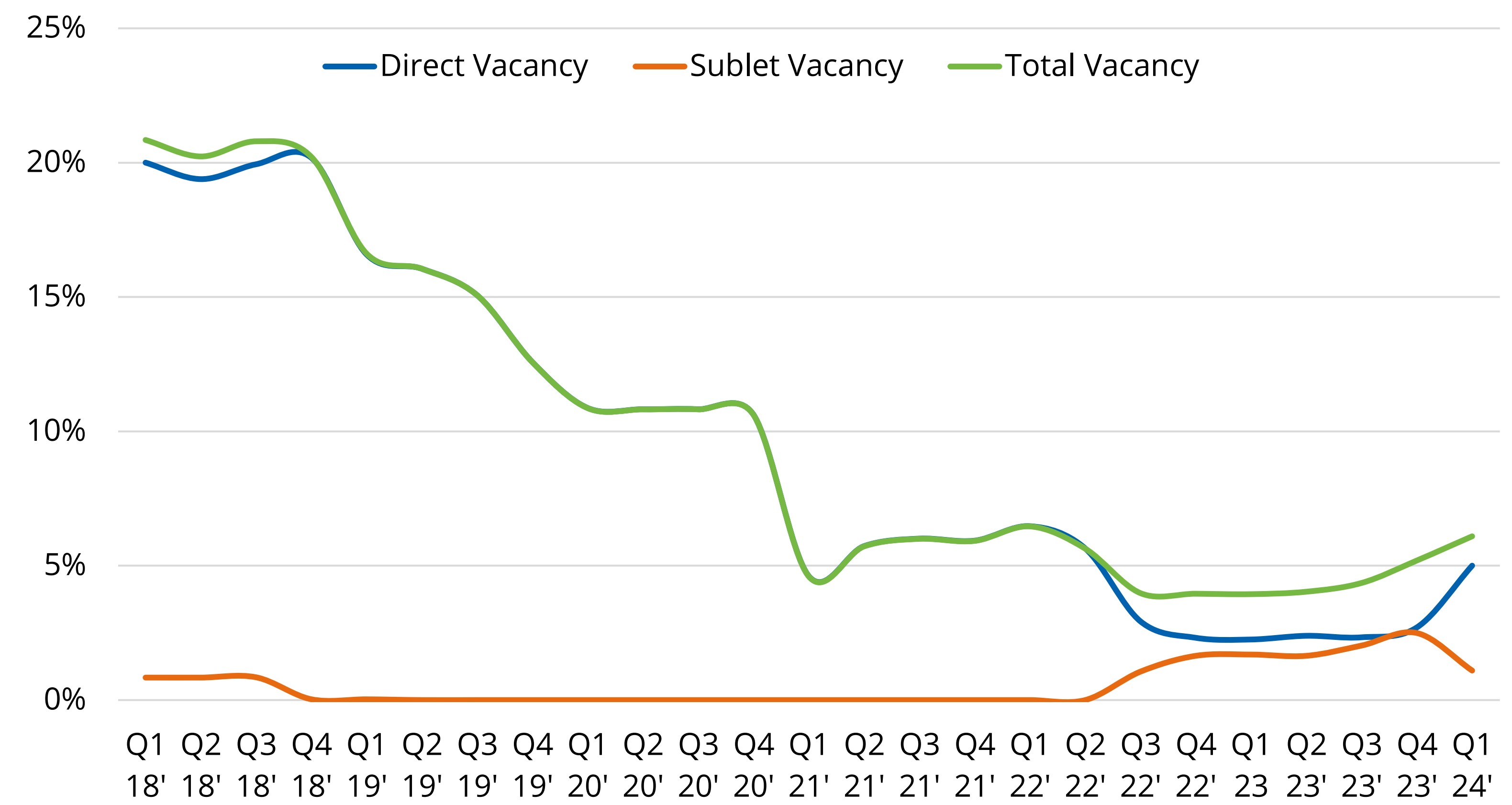
MARKET OVERVIEW

The Raleigh-Durham research triangle is the mid-Atlantic hub for the life sciences sector. The region primarily serves the agricultural industries, with a growing population of biotechnology firms gravitating toward the ecosystem. The area is highly concentrated with the Research Triangle Park, accounting for 650 companies, out of the entire region's 850 companies.

Fujifilm Diosynth Biotechnologies recently announced plans to double their campus's footprint in Holly Springs. The firm plans to invest $1.2B into the new campus, creating 680 jobs. Aided by the North Carolina Department of Commerce's Economic Investment Committee, which granted $15M over the next 12-years to help incentivize the project. Furthermore, both Wake County and Holly Springs contributed $31M and $23.5M, respectively. In total, the FuijFilm expansion is set to add $4.8B to North Carolina's GDP over the next 12-years.

TRENDLINES	Q1 2024	Q1 2023	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	10.52	10.49	↑	↔
NET ABSORPTION (THOUSANDS SF)	(143,092)	(9,970)	↓	↔
VACANCY RATE	11.17%	6.68%	↑	↑
UNDER CONSTRUCTION (MSF)	6,65	5.62	↓	↔
ASKING RENT, NNN (PSF)	$30.06	$27.93	↑	↑
YTD NIH STATE GRANTS (BILLIONS)	$.642	$0.248	↑	↑

VACANCY RATE

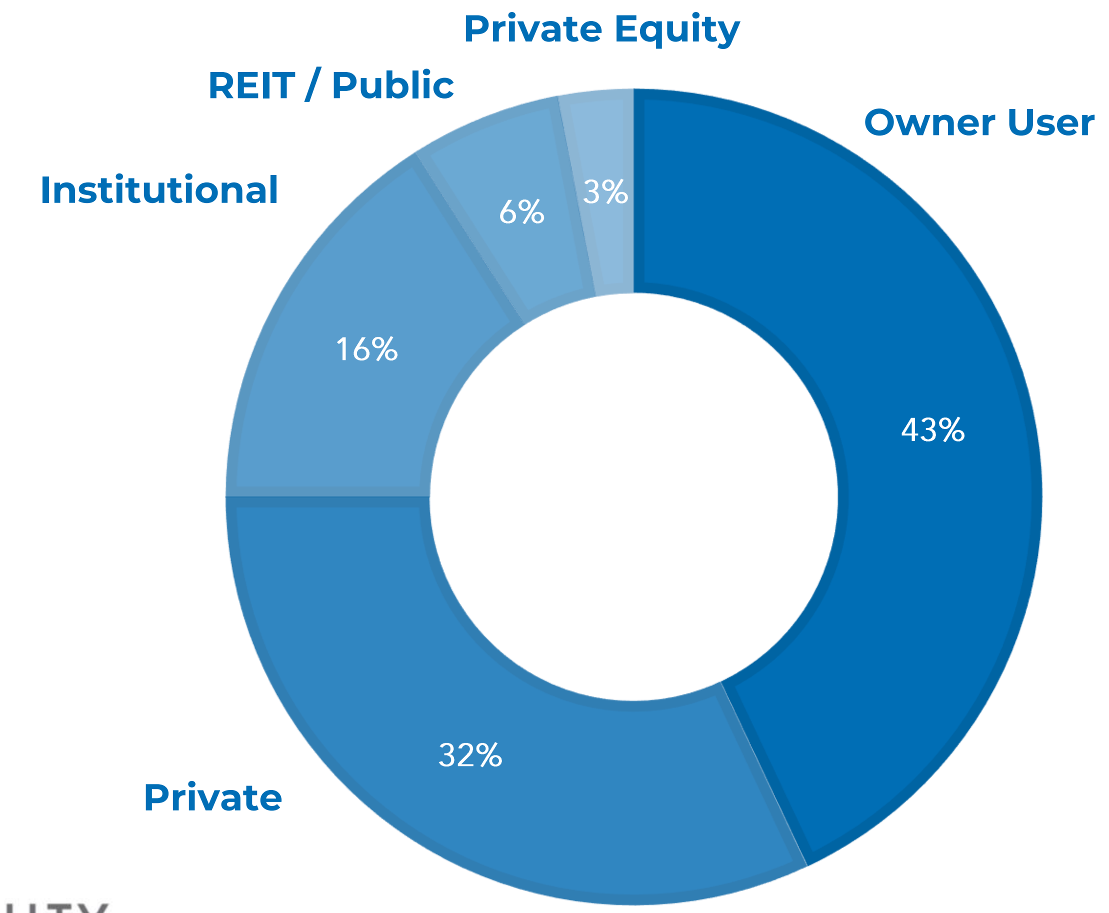


Source: TW Research. CoStar

LOCAL NIH FUNDING | YTD 2024

ORGANIZATION	AWARDS	FUNDING	CITY
Research Triangle Institute	14	$304,874,842	Research Triangle Park
Univ Of North Carolina Chapel Hill.	355	$189,369,007	Chapel Hill
Duke University	325	$158,572,419	Durham
Wake Forest University Health	81	$34,593,407	Winston-Salem
North Carolina State University	43	$16,060,981	Raleigh
University of North Carolina Charlotte	10	$3,631,066	Charlotte
Epicypher, Inc.	4	$3,498,016	Research Triangle Park
East Carolina University	8	$2,553,966	Greenville
University Of North Carolina Greensboro	8	$2,486,105	Greensboro

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

ALEXANDRIA

LONGFELLOW

TRINITY CAPITAL

LEASE | Q1 2024

TENANT	TYPE	ADDRESS	SIZE	MARKET
KBI Biopharma	Sublease	4117 Emperor Blvd	38,750	RTP
ELO Life Sciences, Inc.	Renewal	5 Laboratory Drive	33,850	RTP

SALE | Q1 2024

ADDRESS	TYPE	SIZE	PRICE	MARKET
300 N. Duke Street	Office/Lab	170,000	$113M	Raleigh

Source: TW Research. CoStar, NIH

TRANSWESTERN

KEY MARKET POINTS

- The region continues to expand its footprint with a stout supply in the development pipeline. The next 12-months will be tested by local supply and demand forces, as negative net absorption continues
- Proximity to South California's mature transportation infrastructure makes the market attractive for future manufacturing firms.
- Strong employment growth is forecasted to continue, with local academia feeding the employment pool.
- Large portion of current construction pipeline will deliver in 2024, over 2MSF.

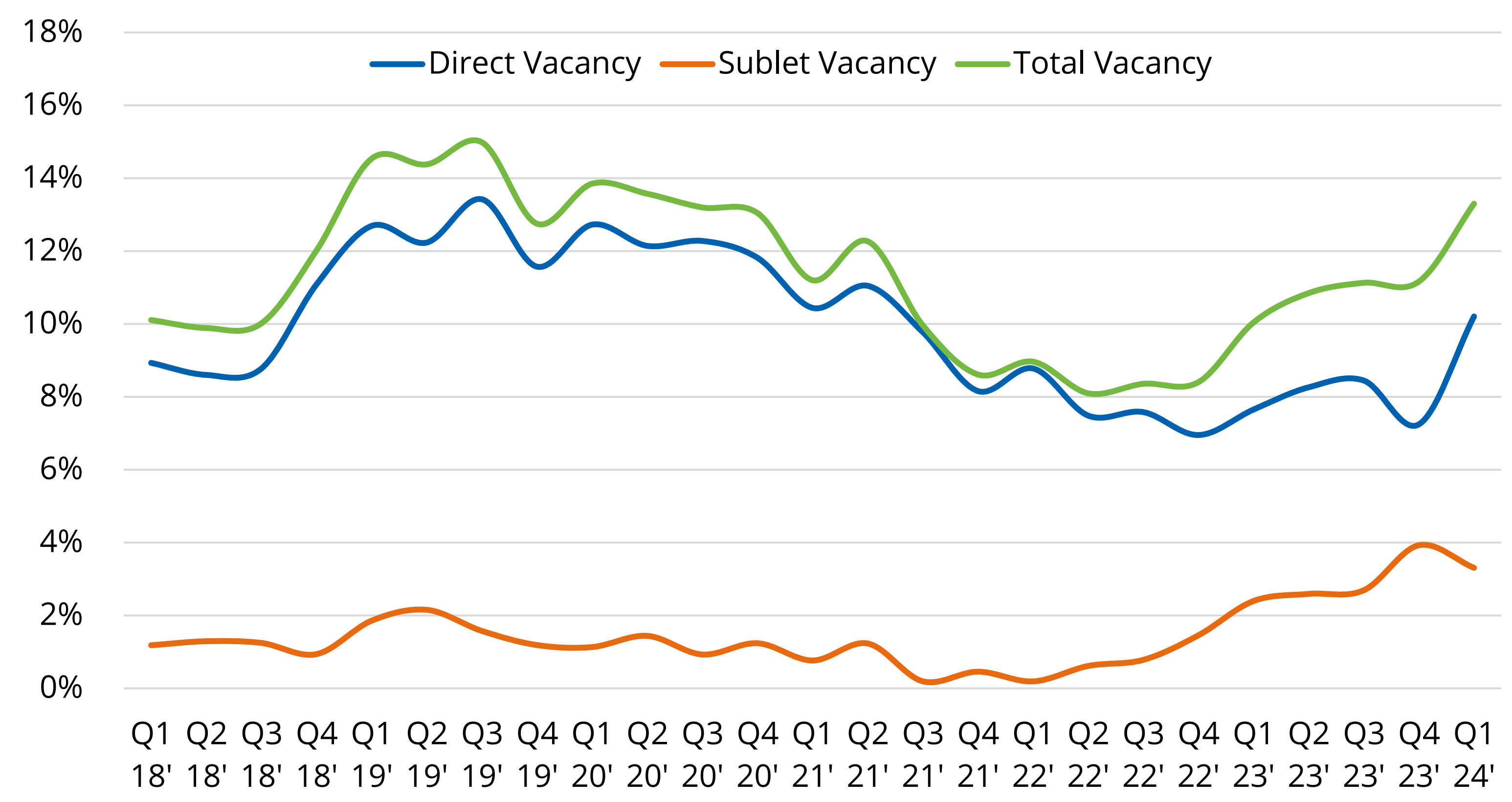
MARKET OVERVIEW

The San Diego life science market continues to be the third most active hubs in the nation, with both Torrey Pines and Carlsbad being largely driven by REIT and private investment inventory. Recent activity is fueled by REIT asset recycling programs and tenant balancing within the market. Academic partnerships remain the backbone of the region, with increased public funding towards research arms, spinning off early-stage firms.

Future development within the region continues making headway, despite the large pipeline of supply. King Street is set to start Mesa Lab Works with a 60,000 SF office conversion, building into spec lab suites from 8,000-15,000 SF. Chinese based BioTest acquired 10140 Mesa Rim in Sorreno Mesa for $23,000,000; with plans to expand its development and production footprint in the United States.

TRENDLINES	Q1 2024	Q1 2023	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	18.32	17.72	↑	↑
NET ABSORPTION (THOUSANDS SF)	(135)	(290)	↑	↓
VACANCY RATE	14.10%	10.15%	↑	↑
UNDER CONSTRUCTION (MSF)	4.45	6.92	↓	↓
ASKING RENT, NNN (PSF)	$52.09	$47.94	↑	↓
YTD NIH STATE GRANTS (BILLIONS)	$.653	$.592	↑	↑

VACANCY RATE



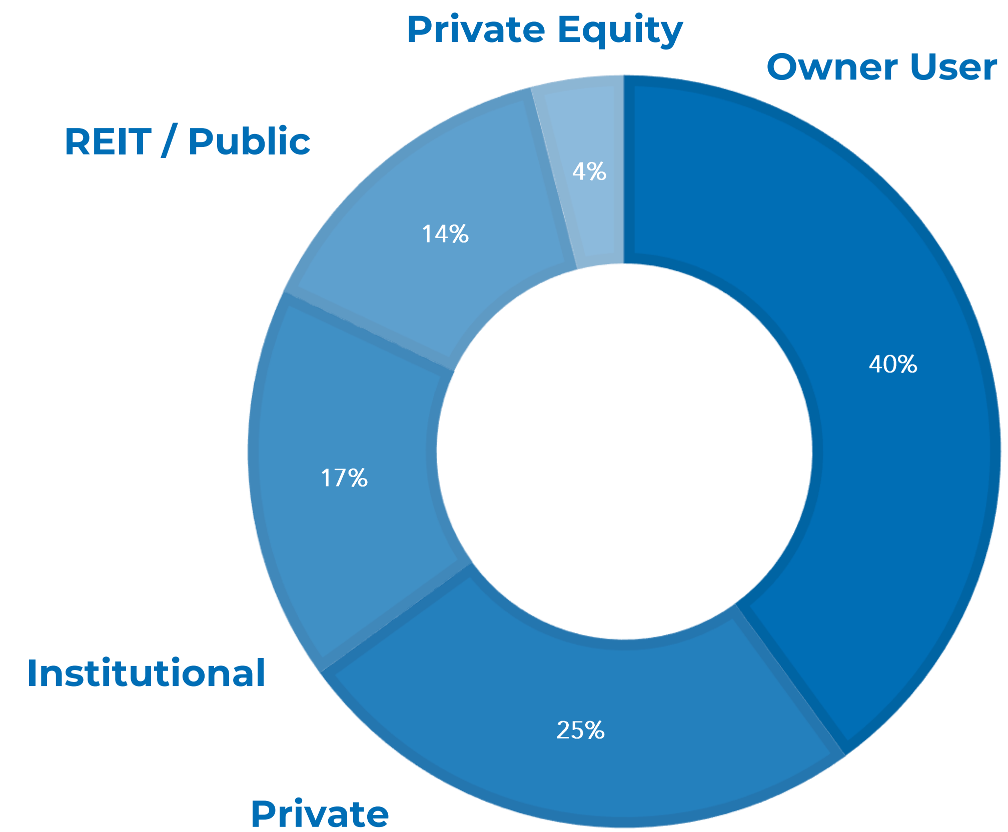
Source: TW Research. CoStar

TRANSWESTERN

LOCAL NIH FUNDING | YTD 2024

ORGANIZATION	AWARDS	FUNDING	CITY
UNIVERSITY OF CALIFORNIA, SAN DIEGO	323	$157,357,252	La Jolla
SCRIPPS RESEARCH INSTITUTE, THE	71	$47,825,316	La Jolla
SALK INSTITUTE FOR BIOLOGICAL STUDIES	24	$13,268,544	La Jolla
LA JOLLA INSITITUTE FOR IMMUNOLGY	14	$12,571,059	La Jolla
SANFORD BURNHAM PREBYS MEDICAL	19	$10,272,336	La Jolla
SAN DIEGO STATE UNIVERSITY	24	$6,528,192	San Diego
SCINTILLION INSITITUTE FOR PHOTOBIOLOGY	5	$2,261,552	San Diego
SAN DIEGO BIOMEDICAL RESEARCH INSTITUTE	3	$1,449,899	San Diego
SINOPIA BIOSCIENCES	1	$1,282,299	San Diego
VETERANS MEDICAL RESEARCH	5	$1,133,392	San Diego
ARIMA GENOMICS	1	$1,084,321	San Diego

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

Blackstone Healthpeak® PROPERTIES ALEXANDRIA.

LEASE | Q1 2024

TENANT	TYPE	ADDRESS	SIZE	MARKET
Pfizer	New	11202 El Camino Real	230,000	Del Mar
Acon Laboratories	New	9440 Carroll Park Dr	97,100	San Diego
Arcturus Therapeutics	Renewal	4796 Executive Dr	24,500	Torrey Pines
Rapport Therapeutics	New	2070 Las Palmas Dr	21,050	Torrey Pines
AnaBIOS	New	1155 Island Ave	20,000	Downtown
Shionogi	New	10075 Barnes Canyon Rd	17,700	Sorrento Mesa
Qpex Biopharma	New	10075 Barnes Canyon Rd	17,800	Sorrento Mesa

SALE | Q1 2024

ADDRESS	SIZE	PRICE	MARKET
11501 Rancho Bernard Blvd	48,000	$30,800,000*	Sorrento Mesa
16981 Via Tazon Way	39,000	$30,800,000*	Sorrento Mesa

Source: TW Research. CoStar, NIH, *Portfolio Sale

TRANSWESTERN

KEY MARKET POINTS

- Net absorption in Q1 remained positive for the second consecutive quarter with 21,700 SF of space taken.
- As vacancy rose to 16.85%, driven by soft deal activity and new inventory delivered to the inventory.
- Two-thirds of development is concentrated in the San Francisco Peninsula and includes both new construction and lab conversions.
- The Genentech Campus recently went into contract for $1.2B. The buyer Lonza Pharmaceuticals plans expansion.

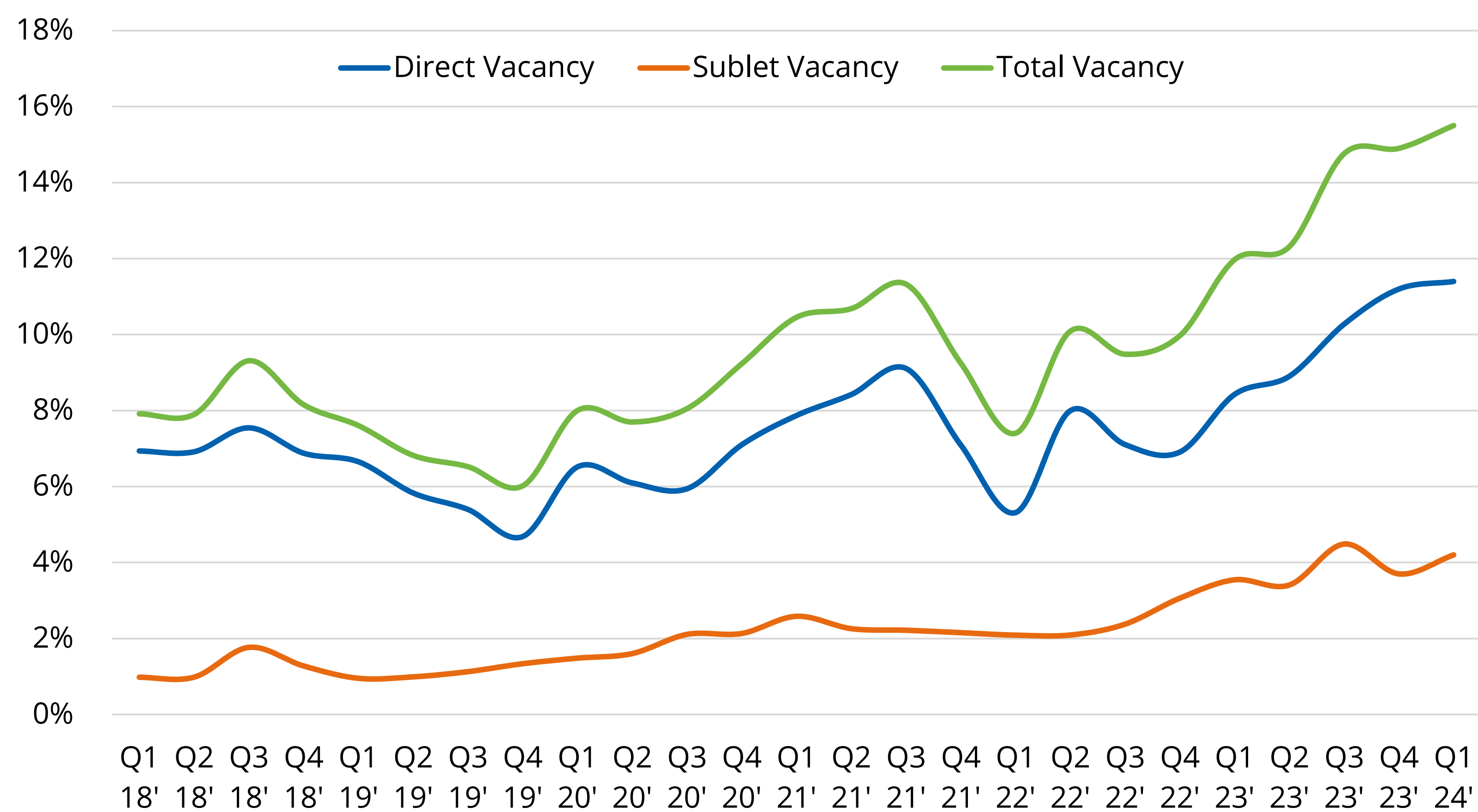
MARKET OVERVIEW

The San Francisco life science's market continues to be resilient in the face of challenging industry fundamentals. Leasing activity has largely been driven by renewals and extensions, with direct space continuing to gather as it comes to market. The glut of supply is forecasted to hit the inventory in the next 12-18 months. Though absorption was negative 689,722 SF for the year in 2023, Q1 absorption was 21,700 SF, the second consecutive positive quarter, bringing positivity to a challenged market. Entitlements and permits continue to progress, signaling that new development isn't fully on pause. Starts are down 50% YOY, still above pre-pandemic levels.

Academic excellence is crucial to the life sciences sector as an engine for scientific research and innovation. The Bay Area is a leader in education, not only across the U.S., but also across the world. The region ranks as one of the nation's top life science markets due to its proximity to major research institutions and access to a deep pool of talent, which is critical for growing companies. As overall employment growth in the Bay Area softened to 1.0% YOY, the life sciences industry continued to expand at a rate of 4.7% in 2023, reaching 171,000 jobs and surpassing a national rate of 3.4%, despite recent layoffs in biotech.

TRENDLINES	Q1 2024	Q1 2023	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	45.79	44.30	↑	↑
NET ABSORPTION (THOUSANDS SF)	21.80	(125.49)	↑	↑
VACANCY RATE	16.85%	10.24%	↑	↑
UNDER CONSTRUCTION (MSF)	11.82	13.35	↓	↓
ASKING RENT, NNN (PSF)	$61.95	$58.79	↓	↑
YTD NIH STATE GRANTS (BILLIONS)	$.815	$.775	↑	↑

VACANCY RATE

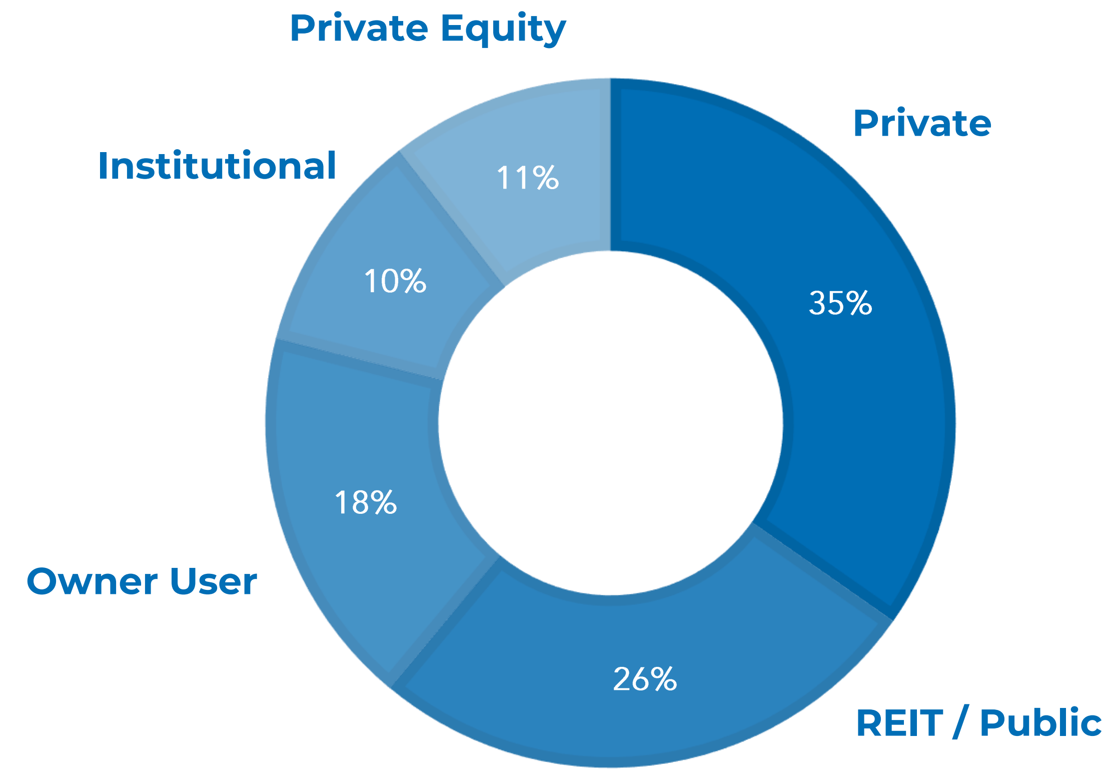


Source: TW Research. CoStar

LOCAL NIH FUNDING AWARDS I YTD 2024

ORGANIZATION	AWARDS	FUNDING	CITY
University Of California, San Francisco	478	$214,814,535	San Francisco
Stanford University	360	$167,013,535	Stanford
University Of California, Davis	191	$80,707,583	Davis
University Of California, Berkeley	127	$54,891,233	Berkeley
Beckman Research Institute / City of Hope	49	$28,317,888	Duarte
Public Health Institute	3	$28,317,022	Oakland
Kaiser Foundation Research Institute	24	$13,454,869	Oakland
J. David Gladstone Institutes	22	$9,885,791	San Francisco
University of California, Santa Cruz	21	$7,710,939	Santa Cruz
Northern California Instituite	9	$5,311,824	San Francisco
Lawrence Berkeley Lab	7	$4,029,761	Berkeley

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

Healthpeak® PROPERTIES

ALEXANDRIA®

Blackstone

LEASE | Q1 2024

TENANT	TYPE	ADDRESS	SIZE	MARKET
Intermolecular	Renewal	3011 North 1st St	147,500	San Jose
INSITRO	Extension	279 East Grand Ave	143,000	South San Francisco
Science Corp	New	300 Wind River Way	77,100	Alameda
Cellanoma	Sublease	500 Lincoln Center	45,000	South San Francisco
Anaspec	Renewal	34801 Campus Dr	44,000	Silicon Valley

CONSTRUCTION PIPELINE

ADDRESS	SIZE	PRICE	MARKET
Elco Yards	Redwood City	625,000	2025
Genesis – Marina	Brisbane	552,000	2024
Berkeley Commons	Berkeley	539,000	2024
The Landing	Burlingame	503,500	2025
Southline	South San Francisco	345,000	2025
Gateway Commons	South San Francisco	327,000	2024

Source: TW Research, CoStar. NIH

TRANSWESTERN

KEY MARKET POINTS

- John Hopkins continues to be a top recipient of NIH funding for FY 2024, with 2023 totaling $829M.
- Balanced development pipeline inline with current demand, pacing positive absorption.
- Asking rates being driven by new space and healthy tenant improvement allowances.
- Rock Creek recently delivered 87,000 SF – 20430 & 20440 Century Blvd.

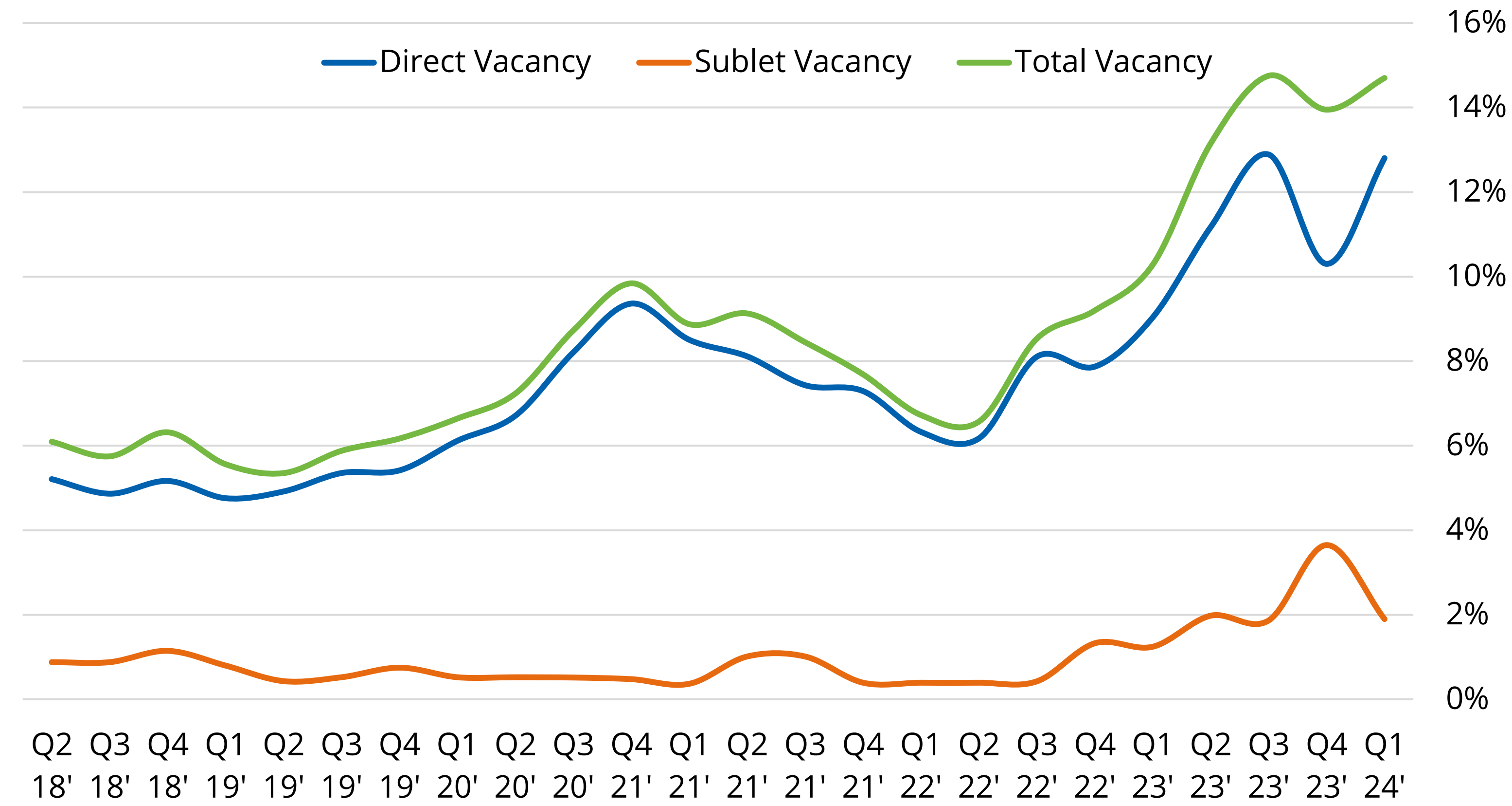
MARKET OVERVIEW

The greater Washington DC and I-270 corridor has remained resilient, given the nationwide slowdown within the life sciences sector. The greater I-270 life sciences ecosystem is well positioned to withstand the broad-based headwinds, given the proximity to governmental and top-tier academic institutions. Additionally, the region is home to a unique tax program, the Biotechnology Investment Incentive Tax Credit, a key program credited toward boosting business development.

The region's life science inventory is heavily weighted towards second-generation space, which allows rents to vary by product makeup, age and location. Newer urban campus developments have been gathering attention, supporting the shift towards tenant synergy. Landlords are having to increase incentives to remain competitive, which has a been a trend over the last 18-months. The development pipeline remains balanced and inline with that local demand can realistically absorb.

TRENDLINES	Q1 2024	Q1 2023	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	10.82	10.29	↑	↑
NET ABSORPTION (THOUSANDS SF)	24.32	(90.62)	↑	↔
VACANCY RATE	13.31%	9.45%	↑	↔
UNDER CONSTRUCTION (MSF)	1.95	1.90	↓	↓
ASKING RENT, NNN (PSF)	$53.75	$49.93	↑	↓
YTD NIH DMV GRANTS (BILLIONS)	$.732	$.663	↑	↑

VACANCY RATE



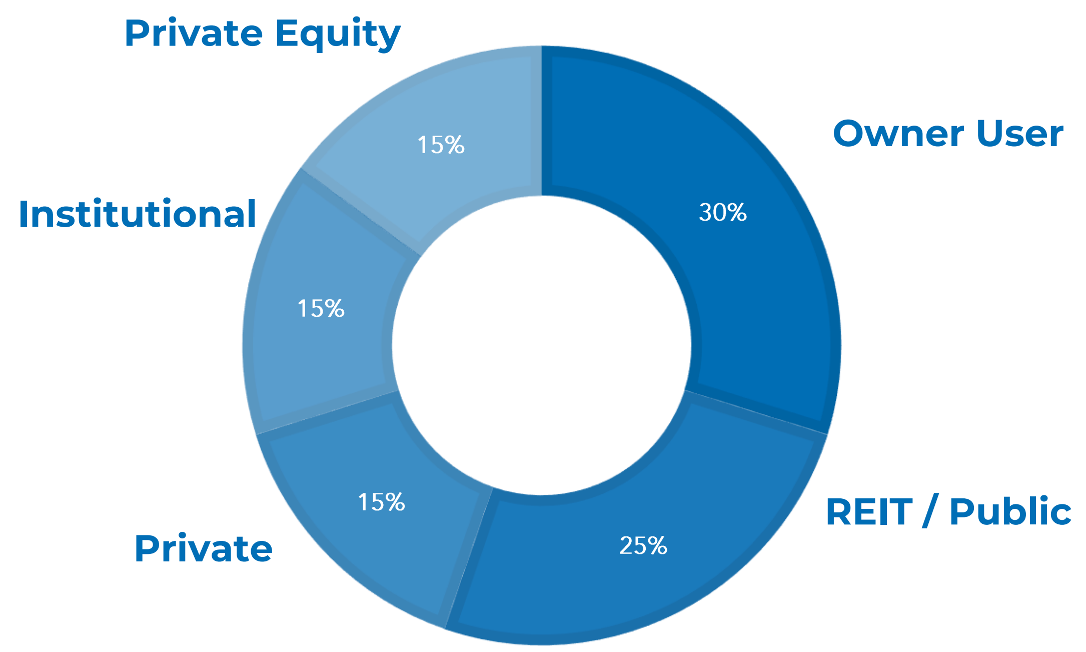
Source: TW Research. CoStar

TRANSWESTERN

LOCAL NIH FUNDING AWARDS I 2024

ORGANIZATION	AWARDS	FUNDING	CITY
Johns Hopkins University	460	$226,580,579	Baltimore
University Of Maryland Baltimore	140	$56,224,43	Baltimore
George Washington University	45	$29,435,864	Charlottesville
Georgetown University	45	$21,003,105	Richmond
University Of Delaware	26	$14,446,442	Newark
Univ Of Maryland, College Park	41	$14,352,657	College Park
Children's Research Institute	28	$10,895,666	Washington
Hugo W. Moser Research Institute	13	$6,391,441	Baltimore
Henry M. Jackson Foundation	14	$5,750,080	Bethesda
Pacific Institute For Res and Evaluation	5	$3,653,171	Beltsville

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

ALEXANDRIA

AstraZeneca

MATAN

LEASE I Q1 2024

TENANT	TYPE	ADDRESS	SIZE	MARKET
OncoC4	Renewal	9640 Medical Center Drive	34,150	Rockville
Immunocore	New	9801 Washingtonian Blvd	19,245	Frederick
STCube	New	9808 Medical Center Dr	19,000	Gaithersburg
Biofacura	Renewal	8435 Progress Dr	18,500	Frederick

Top Construction Pipeline Developments

ADDRESS	SIZE	MARKET	DELVERY
4 MLK	250,000	University BioPark	Q4 2024
Research Square	89,640	Rockville	Q3 2024

Source: TW Research. CoStar, NIH

PHOENIX – KEY POINTS

- Phoenix has the fastest employment growth out of all the merging life science markets.
- 6 MSF of preliminary planned developments within the Phoenix Bioscience Core
- Mayo's Discovery Oasis: Upcoming development situated on 220 acres.

MARKET OVERVIEW

The Phoenix life sciences market has been slowly growing since the early-2000s; where a solid foundation has allowed new entrants to the ecosystem to find success. Within the last decade, the industry's growth has been picking up pace. Centered around the Phoenix Bioscience Core (PBC), a 30-acre downtown location, the PBC location is home to the densest population of bioscience and research tenants in Arizona. The city of Phoenix is clearly embracing the life sciences growth, with its Mayor Kate Gallego stating the importance of fostering life sciences expansion in the 2023 State of the City address "The city and I want to show that we are prioritizing this (industry) and that we are part of the vision to make sure it succeeds." The collaborative environment with embracing public and private partnerships solidifies the region's future and continued growth.

Beyond the cluster of tenants, the three academic institutions local to the area have embraced the collaborative vision and taken space in the PBC (Arizona State University, Northern Arizona University, and the University of Arizona). The Phoenix ecosystem resembles other life sciences hubs that have found success; TMC Helix Park in Houston, TX and Mayo's Discovery Square in Rochester, MN. Both campuses had the drivers of education and medical centers to help integrate the science directly benefiting the healthcare. Reducing the distance between the research and the doctors and patients who are the end users of the science, ultimately yields better results.

TRENDLINES	Q1 2024	Q1 2023	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	2.29	2.29	↑	↑
NET ABSORPTION (THOUSANDS SF)	0	6,5	↑	↔
VACANCY RATE	6.41%	8.73%	↑	↔
UNDER CONSTRUCTION (MSF)	.35	.90	↓	↓
ASKING RENT, NNN (PSF)	$41.75	$40.35	↑	↓
YTD NIH DMV GRANTS (BILLIONS)	$.037	$.032	↑	↑

LOCAL NIH FUNDING AWARDS I 2024 YTD

ORGANIZATION	AWARDS	FUNDING	CITY
Arizona State University – Tempe Campus	41	$15,219,756	Tempe
Mayo Clinic Arizona	20	$8,288,747	Scottsdale
Banner Health	2	$5,965,292	Phoenix
St. Joseph's Hospital & Medical Center	5	$1,566,032	Phoenix
Translational Genomics Research Institute	3	$1,435,577	Phoenix
Northern Arizona University	3	$1,162,169	Flagstaff
Ceria Therapeutics, Inc.	1	$1,006,408	Tucson
Luceome Biotechnologies, Inc.	1	$1,000,000	Tucson
BMSEED, Inc.	1	$861,339	Tempe
Arizona Veterans Research Foundation	1	$645, 752	Phoenix

Source: TW Research. CoStar

TRANSWESTERN

Market	Inventory Square Feet	Overall Vacancy Rate	Net Absorption	12-Month Net Absorption	Asking Rents	Annual Rent Change	Under Construction
Boston	67,961,050	13.20%	122,250	679,000	$57.80	5%	19.360,000
Chicago	12,005,750	11.80%	58,150	75,000	$45.80	10%	810,000
Houston	4,41,800	18.61%	(36.110)	240,000	$46.20	9%	1,250,000
New Jersey	32,680,000	10.30%	(76,770)	(129,000)	$36.40	5%	1,700,000
New York	3,643,816	32.68%	(24,350)	150,000	$55.91	1%	850,000
Philadelphia	23,198,100	11.06%	(204,040)	248,000	$41.44	7%	6,000,000
Raleigh/Durham	10,520,000	11.17%	(143,250)	236,000	$29.86	8%	6,650,000
Phoenix	2,290,500	6.6%	0	31,000	$41.75	3%	350,000
San Diego	18,320,500	14.01%	(135,100)	216,000	$47.25	6%	5,450,000
San Francisco	45,790,750	16.87%	21,860	(559,000)	$59.83	2%	11,825,000
Washington DC	10,820,000	10.83%	24,320	272,000	$54.63	7%	1,950,000
TOTAL	229,306,016	14.62%	(356,996)	(344,671)	$54.31	7%	36,500,000

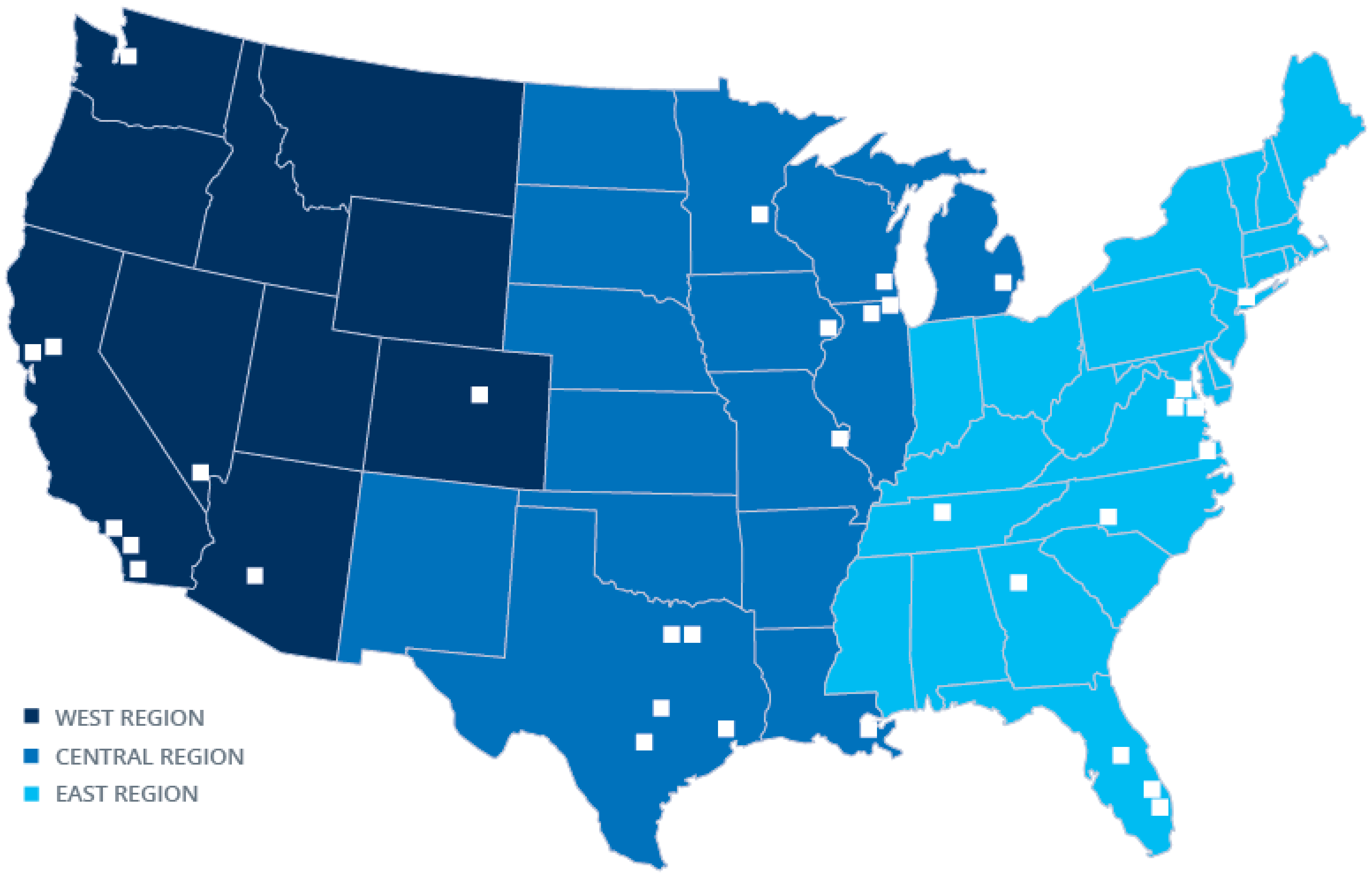
Source: TW Research. CoStar

National Coverage

33 Offices – 3 Regions

Transwestern's research team has sorted through tens of thousands of buildings to amass a qualified building inventory. Our aim is to identify the entire life sciences market inventory by including owner users, suburban markets and outliers that are vital to understanding the entire ecosystem.

At Transwestern, our insights are rooted in granular data that is evaluated and envisioned to identify, execute and deliver tangible value for our clients and industry partners. Please feel free to connect with our team, as we embrace industry collaboration within the life sciences community.



REAL ESTATE SERVICES (TRS)

Agency Leasing
Asset Services
Capital Markets
Tenant Advisory + Workplace Solutions
Research & Investment Analytics

INVESTMENT GROUP (TIG)

Separate Accounts
Discretionary Funds
Non-Discretionary Accounts
Investment Analysis

DEVELOPMENT COMPANY (TDC)

Speculative
Build-to-Suit
Fee Development

HOSPITALITY GROUP (THG)

Hospitality Integration
Asset Repositioning
Boutique Hotel Development & Investment

PRIMARY AUTHOR

Alex Browne
Life Science Research Director
Alex.Browne@transwestern.com
415 489 1785

FOR MORE INFORMATION

Elizabeth Norton
Sr. Managing Director
Research Services
Elizabeth.Norton@transwestern.com
202 775 7026

Doug Prickett
Sr. Managing Director
Research & Investment Analytics
Doug.Prickett@transwestern.com
214 292 6406

ABOUT TRANSWESTERN

Four dynamic, integrated companies make up the Transwestern enterprise, giving us the perspective to think broadly, deeply and creatively about commercial real estate. Clients and investors rely on us for expertise that spans institutional and opportunistic investment, development, hospitality, and brokerage and asset services. Our award-winning, collaborative culture empowers team members with resources and independence to work across boundaries in pursuit of innovative solutions, reinforcing a reputation for service excellence that translates to measurable results. Through offices nationwide and alliance partners around the globe, we positively impact the built environment and our communities while fostering a work climate that champions career vitality for all. Learn more at transwestern.com and @Transwestern.

RESEARCH METHODOLOGY

The information in this report is a compilation of life science properties including office, industrial and flex. Qualified properties must include one of the following spaces, laboratory, cleanroom, dry laboratory or GMP space. All properties are in select U.S. metropolitan areas. Government and on-campus academic owned buildings are excluded from analysis. All rents are reported as triple net and can be skewed, in some cases, due to factors including, but not limited to, the level of new construction and the amount of available space with no listed asking rents.