TRANSWESTERN

COMMERCIAL REAL ESTATE

U.S. MARKET | LIFE SCIENCES

Q3 2023

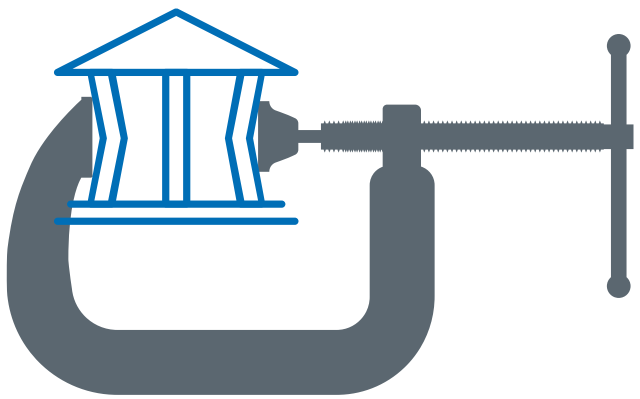
Contents

TRANSWESTERN

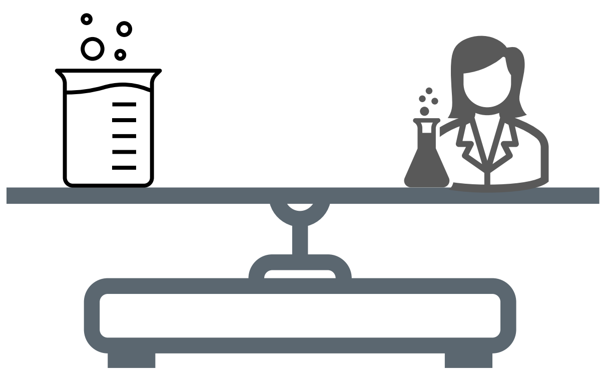
Life Sciences

Q3 2023

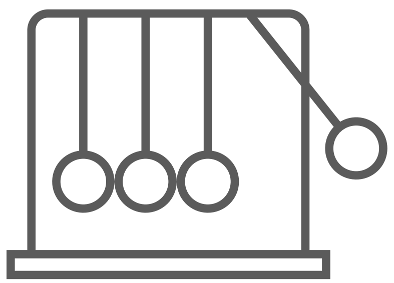
THE VIEW FROM HERE



Interest rate raises have put the squeeze on industry stakeholders, especially within development



Tenants embracing operational cost cuts to ensure the progression of their science



Venture funding regaining positive momentum, after pause in M&A and IPO activity

NET ABSORPTION

(682,500) SF

Driven by top markets

VACANCY RATE

12.2%

Highest in four years

NATIONAL INVENTORY

222.8 MSF

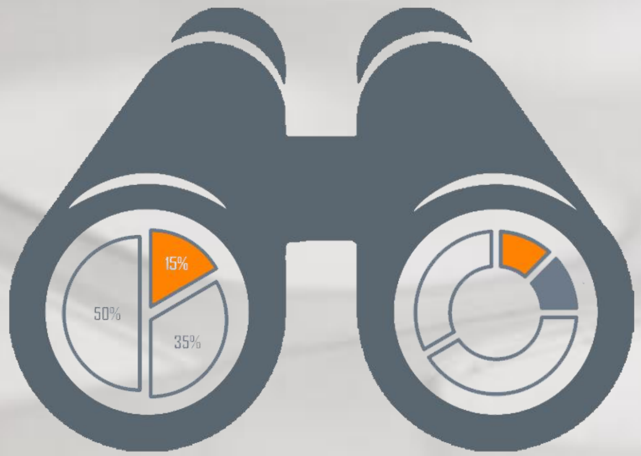
Over 10 Markets

ASKING RENT

$48.72

Annual PSF

NATIONAL MARKET OUTLOOK



Although the life sciences industry continues to sustain headwinds, industry experts are beginning to report a positive shift towards favorable conditions. The capital markets and venture funding pause experienced in late 2022 and beginning of 2023 has begun to regain momentum, as an economic soft landing is within the possibilities of outcomes. The YOY NIH budget increase is expected to be in line with inflation and has managed to avoid government cutbacks. Industry employment is on the rise, driven by a bump in doctorate degrees within the last 24 months. Academic institutions at the heart of life sciences clusters have signaled their continued investment in post-graduation work, with further investment in incubators and graduation space. These incubator ecosystems experience little vacancy throughout the nation, demonstrating that the pipeline of innovation is equally robust, therefore fulfilling the inventory supply on the horizon.

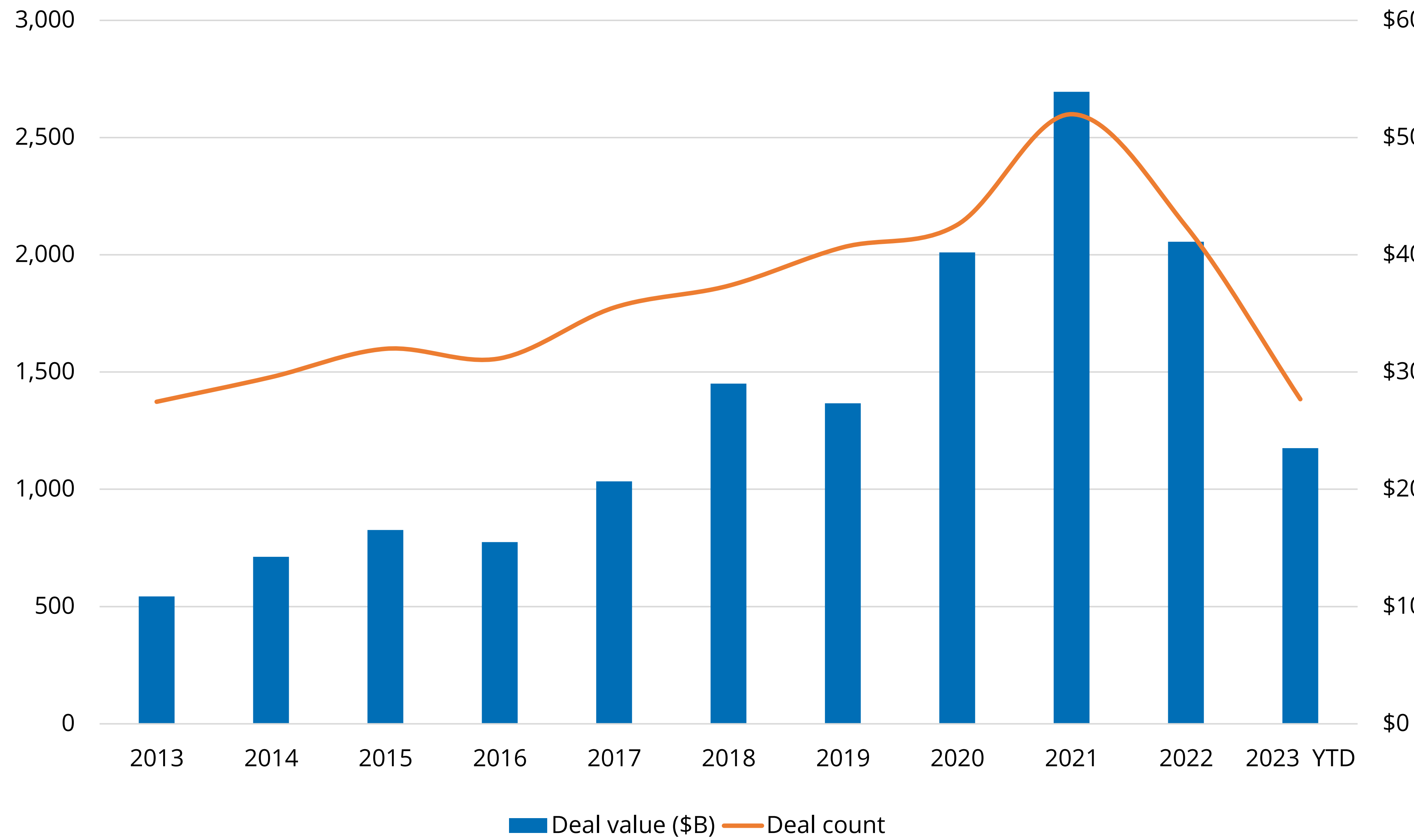
Mature life sciences companies aren't immune from today's macroeconomic forces with public markets, governmental regulations, and general reversal on globalization, making the landscape challenging to navigate. Future sector growth and continued stabilization are driven by a combination of the reshoring of manufacturing, record government investment on national innovation, energy modernization trends, and age-related healthcare demands.

Apart from the macroeconomic challenges throughout the commercial real estate sector, the robust construction pipeline and new inventory deliveries are a looming threat that has been widely recognized. The dip in leasing activity from conscious and capital-constrained life sciences companies has strengthened the overall sector, by curbing unnecessary spending. Layoffs have been noted to be reabsorbed by the industry and enable growing firms to benefit. These new hires bring diversified perspectives that can fuel breakthrough innovation. As capital begins to flow and the venture cycle regains momentum, driven by successes in the public market, the overall outlook becomes brighter for the life sciences sector. The strength of real estate within the life sciences sector is contingent on healthy firms, qualified credit, bright talent, and great science.

KEY VENTURE FUNDING POINTS

- Venture-backed life sciences funding totaled $8.5B in the third quarter, a noteworthy uptick from the first and second quarters, $7.4B and $7.6B, respectively. The $23.51B raised year-to-date remains below pandemic highs but hovers at pre-pandemic levels.
- Industry sentiment continues to be positive, with life sciences and medical technology remaining top industries for private deployment of investment capital. Startup momentum is evident in the low vacancy rates at biotech incubators across the nation.
- Academic institutions support their post-grad ecosystem with increased investment in local incubator and graduation space.
- Many of these existing startup companies that have managed to survive the winter of capital constraints will emerge stronger, as capital investment increases. Late 2022 and early 2023 funding was heavily portioned toward later stage companies, where the science was more proven to succeed.

VC DEAL & FUNDING VOLUME



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 YTD
Deal value ($B)	$10.85	$14.23	$16.53	$15.50	$20.67	$29.01	$27.34	$40.21	$53.90	$41.11	$23.51
Deal count	1,373	1,478	1,599	1,558	1,775	1,868	2,032	2,128	2,600	2,122	1,384

Source: TW Research, Pitchbook

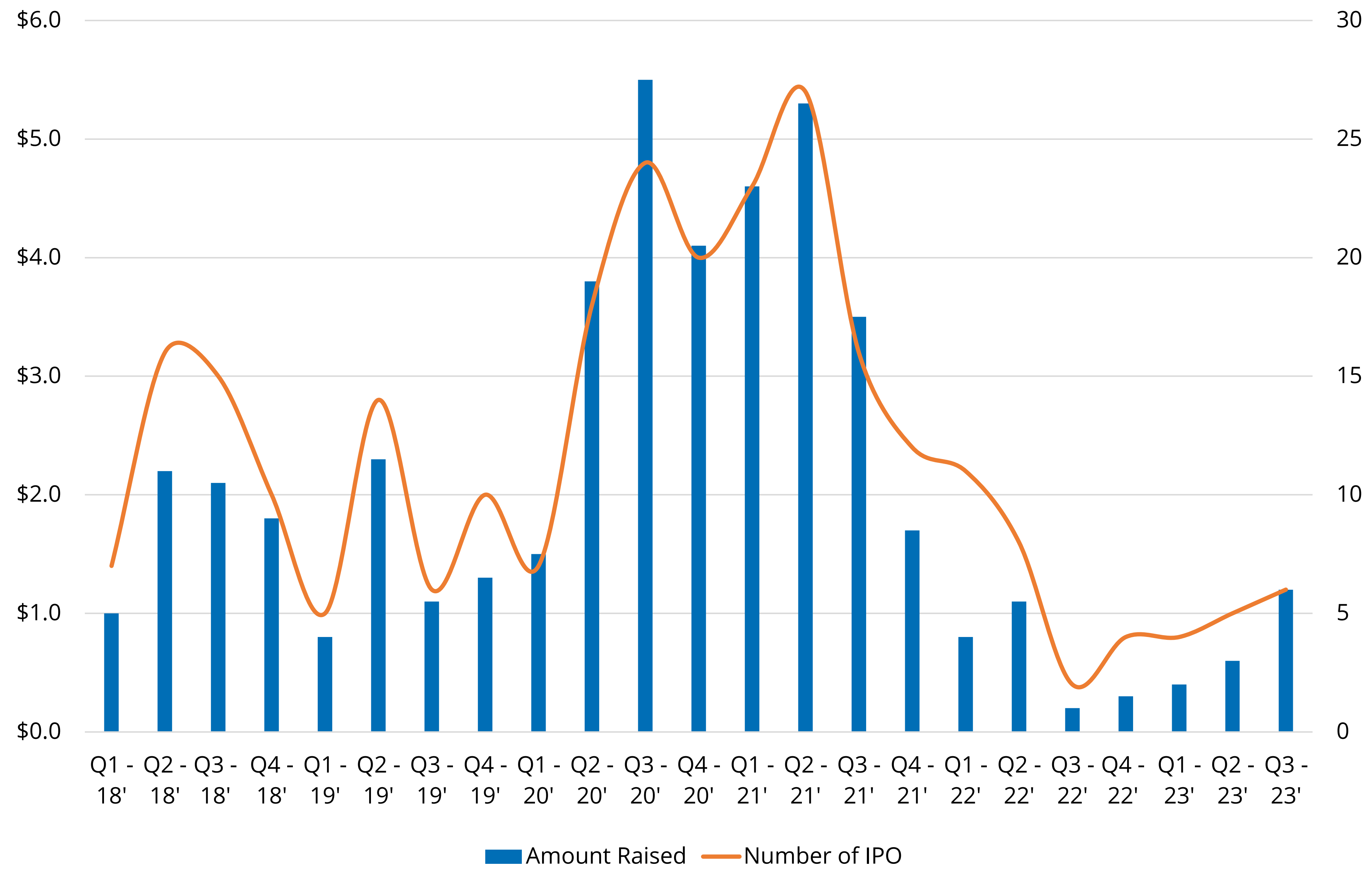
IPO MARKET SUMMARY

- The public markets play a critical role in the life sciences industry. Undergoing a public offering is an opportunity for venture firms and hardworking talent to unlock a wealth of options for company growth. The pull back in IPO activity in 2022 has been a hindrance to the venture funding cycle; without the turnover of capital within the cycle, venture firms pivoted to a risk-off mentality to conserve dry powder and focus on quality science.

- 2020-2021 was the highwater mark for public offerings in the sector. In 2022, the funding rush found a bottom, with 2023 experiencing a rebound toward normalization.

- The entirety of the IPO market in the U.S.-based exchanges has experienced similar performance. In 2021 a total of 908 companies entered public exchanges raising $282.7B. In 2022, 149 IPOs were brought to market, yielding $20.8B. 2023 market performance has been on the recovery with year-end totals forecasted to be above 2022.

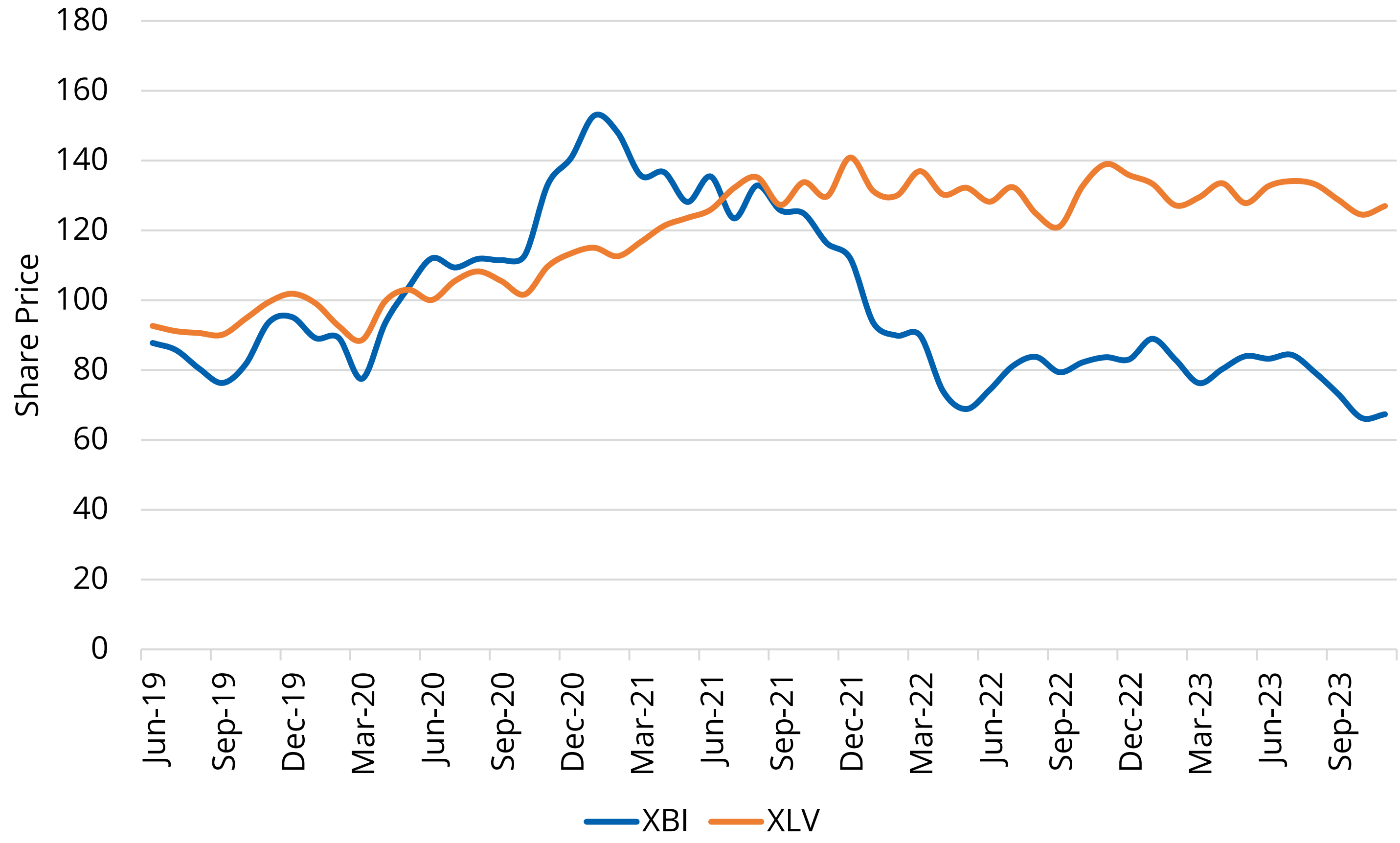
LIFE SCIENCES IPO ACTIVITY



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 2023 year-to-date performance has regained a parallel trend, as IPO activity and overall market sentiment has remained positive.

MARKET FUND COMPARISION



RECENT LIFE SCIENCES IPO – Q3 & EARLY Q4

COMPANY	STAGE - IPO	FOCUS	IPO DATE	PROCEEDS	IPO PRICE	CURRENT PRICE
Cargo Therapeutics (CRGX)	Phase 2	Cancer - Cell Therapy	11/9/2023	$281M	$15.00	$15.29
Lexeo Therapeutics (LXEO)	Phase 1	Cardiovascular Diseases + Alzheimer	11/2/2023	$100M	$11.00	$11.11
Abivax (ABVX)	Phase 3	Immune Diseases - Small Molecules	10/20/2023	$236M	$11.60	$10.07
Adlai Nortye (ANL)	Phase 3	Cancer - Small Molecules	9/29/2023	57.5M	$23.00	$8.21
RayzeBio (RYZB)	Phase 3	Cancer - Cell Therapy	9/14/2023	$311M	$18.00	$20.29
Neumora Therapeutics (NMRA)	Phase 3	CNS Disorders - Small Molecules	9/14/2023	$250M	$17.00	$11.70
Mira Pharmaceuticals (MIRA)	Preclinical	Other - Small Molecules	8/2/2023	$8.9M	$7.00	$1.52
Turnstone Biologics (TSBX)	Phase 1	Cancer - Cell Therapy	7/20/2023	$80M	$12.00	$1.87
Sagimet Biosciences (SGMT)	Phase 3	Liver Diseases - Small Molecules	7/13/2023	$85M	$16.00	$2.67
Apogee Therapeutics (APGE)	Preclinical	Immune Diseases - Antibodies	7/13/2023	$300M	$17.00	$15.02
60 Degree Pharmaceuticals (SXTP)	Marketed	Infectious Diseases	7/12/2023	$7.6M	$5.30	$0.61
Intensity Therapeutics (INTS)	Phase 1	Cancer - Small Molecules	6/29/2023	$20M	$5.00	$2.89
Azitra (AZTR)	Phase 1	Other - Biologics	6/15/2023	$7.50M	$5.00	$1.80

Source: TW Research, Pitchbook & NASDAQ

NIH FUNDING HIGHLIGHTS

- The 2023 budget for NIH funding was $47.6B. Awards have exceeded $33.9B. The current distributions are on trend to meet the annual budget.
- In August, Congress approved an annual increase of 2.5%, expected to approach $49B. The latest debt negotiations in 2023 haven't taken aim at the NIH budget.
- 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)
    - Federal Drug Administration (FDA)
    - National Institute of Allergy and Infectious Diseases (NIAID)

2023 NIH FUNDING I TOP RECIPIENTS

ORGANIZATION	CITY	STATE	AWARDS	FUNDING
Johns Hopkins University	Baltimore	MD	1,411	$786,942,854
University Of California, San Francisco	San Francisco	CA	1,435	$720,236,546
University Of Pennsylvania	Philadelphia	PA	1,270	$651,631,196
University Of Michigan At Ann Arbor	Ann Arbor	MI	1,346	$647,644,529
University Of Pittsburgh At Pittsburgh	Pittsburgh	PA	1,214	$641,387,029
Stanford University	Stanford	CA	1,134	$626,387,484
Massachusetts General Hospital	Boston	MA	1,051	$621,280,477
Washington University	Saint Louis	MO	1,154	$619,474,331
Duke University	Durham	NC	970	$609,267,868
Yale University	New Haven	CT	1,123	$595,677,236
Columbia University Health Sciences	New York	NY	1,014	$583,996,204
University Of California, Los Angeles	Los Angeles	CA	869	$567,147,736
University Of California, San Diego	La Jolla	CA	1,041	$547,926,325
University Of Washington	Seattle	WA	995	$531,541,443
Research Triangle Institute	Triangle Park	NC	70	$503,809,542

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

NATIONWIDE TOP OCCUPIERS

Source: TW Research, ZoomInfo & CoStar

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KEY MARKET POINTS

- Tenant improvement allowances trending upward in 2023
- Robust construction pipeline set to deliver with large inventory boost on the horizon
- Leasing activity remains strong, continues to be outpaced by new deliveries, trend expected to continue
- 20 MSF of development projects are permitted, yet to break ground
- 4,950 new undergrad biomed degrees earned in 2022

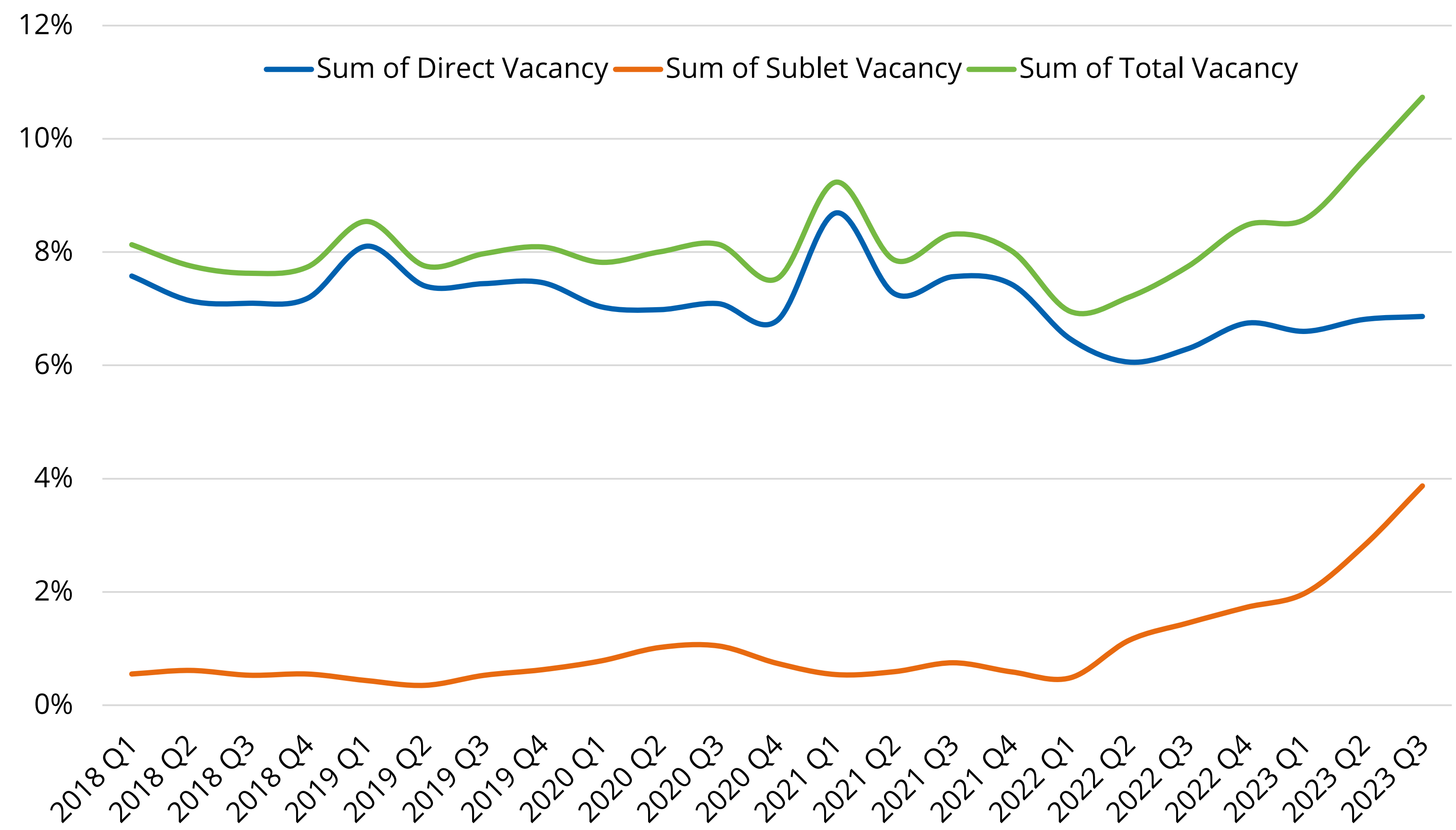
MARKET OVERVIEW

The Boston - Cambridge life sciences markets have remained resilient amongst challenging times. The local supply and demand forces continue to be pushed to the limit, with mixed results for both tenants and landlords. Despite an uptick in vacancy over the last three quarters, the pulse of leasing activity remains strong. Big-name pharmaceutical firms have continued to grow their local footprint over the last two years, taking advantage of the blip in venture funding and leveraging their own established credit.

The robust construction pipeline continues to weigh on forecasts. The late preleasing data sources give a range of 29% to 44% for deliveries that are scheduled to hit the inventory in the next 12-24 months. Boston's ability to absorb the additional inventory might meet the market right as venture funding regains traction and economic uncertainty is tamped down for favorable conditions ahead.

TRENDLINES	Q3 2023	Q3 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	65.83	62.29	↑	↑
NET ABSORPTION (THOUSANDS SF)	(60.51)	308	↓	↔
VACANCY RATE	10.71%	7.70%	↑	↑
UNDER CONSTRUCTION (MSF)	7.56	10.23	↓	↓
ASKING RENT, NNN (PSF)	$56.84	$51.94	↑	↔
YTD NIH STATE GRANTS (BILLIONS)	$3.35	$3.11	↑	↔

VACANCY RATE

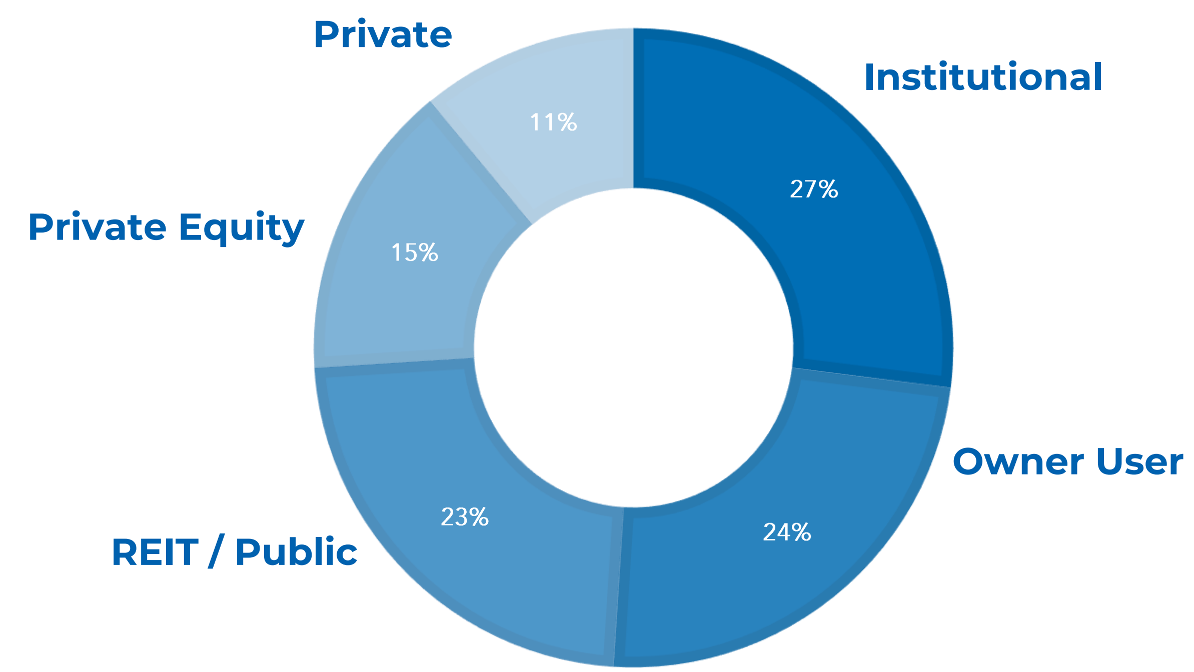


Source: TW Research. CoStar, NIH

LOCAL NIH FUNDING | 2023

ORGANIZATION	AWARDS	FUNDING	CITY
Massachusetts General Hospital	1051	$621,280,477	Boston
Brigham And Women's Hospital	650	$384,746,183	Boston
Boston Children's Hospital	431	$233,844,390	Boston
Harvard Medical School	343	$170,137,538	Boston
Univ Of Massachusetts Medical School	343	$175,636,904	Worcester
Boston University Medical Campus	275	$180,844,499	Boston
Massachusetts Institute Of Technology	254	$116,168,478	Cambridge
Dana-Farber Cancer Institute	223	$150,324,001	Boston
Beth Israel Deaconess Medical Center	217	$122,507,523	Boston

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

ALEXANDRIA

Blackstone

DIVCOWEST

LEASE I MID-YEAR 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
Orbital Therapeutics	Sublease	100 Binney Street	166,000	East Cambridge
Novartis	Renewal	700 Main Street	99,000	East Cambridge
Visterra, Inc.	Renewal	275 Second Avenue	63,800	Waltham
Voyager	New	75 Hayden Avenue	61,000	Lexington
Asellas Pharma	New	441 Morgan Ave	62,900	Cambridge
Portal Innovations	New	135 Morrissey Blvd	58,000	Boston
Sallgen Therapeutics	New	10 Maguire Road	41,000	Lexington
Lantheus Medical	New	201 Burlington Road	41,500	North Suburb
Seurat Technologies	New	400 Research Drive	31,000	Wilmington

SALE I MID-YEAR 2023

ADDRESS	TYPE	SIZE	PRICE	MARKET
790 Memorial Dr*	Office	52,916	$90,835,740	Cambridge
780 Memorial Dr *	Office	51,000	$84,567,497	Cambridge
225 Second Ave *	Office	134,129	$77,763,072	Waltham
275 Second Ave *	Office	107,062	$74,514,431	Waltham
266 Second Ave *	Office	98,249	$37,319,260	Waltham
790 Memorial Dr*	Office	52,916	$90,835,740	Cambridge
780 Memorial Dr *	Office	51,000	$84,567,497	Cambridge

Source: TW Research. CoStar
*Portfolio sale

KEY MARKET POINTS

- Vacancy rate is driven largely by direct availably, limited sublease space on market
- Two noteworthy developments underway, affirming investment interest
- Leasing activity continues to trends positive in last three quarters
- Stable market with owner users anchoring inventory
- Increasing number of local Bio-Med degrees awarded YOY

MARKET OVERVIEW

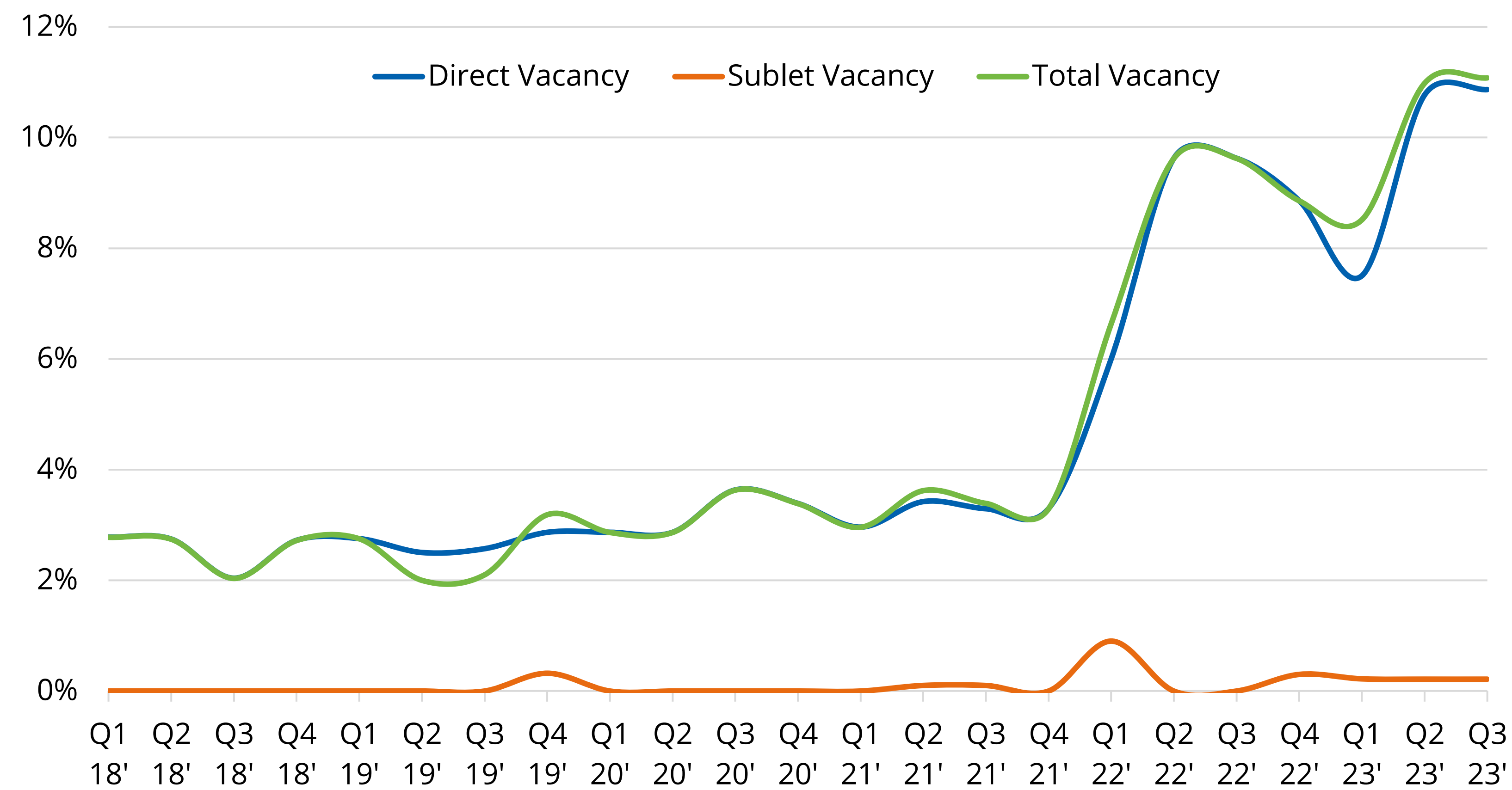
Chicago is rapidly becoming an established market for life sciences companies. The greater Chicago area has received limited coverage within life sciences leasing reports. Much of the existing inventory is made up of owner-users, totaling seven million square feet. The remaining four million square feet of leased inventory is split between the North Chicago and Chicago's CBD.

Chicago's south side is the location of the Hyde Park Labs development by Trammell Crow Company and Beacon Capital Partners. The University of Chicago has spoken for half of the space and will be including incubator and graduation space. The 302,688 SF building is set to have a range of suite sizes, aimed at boosting the local life sciences startup ecosystem.

Sterling Bay's 1229 West Concord redevelopment is slated to deliver in late 2023, bringing 228,000 of state-of-the-art life science space to the Lincon Yards neighborhood. The delivery will ultimately trigger a large spike in vacancy, preleasing activity has yet to be released.

TRENDLINES	Q3 2023	Q3 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	11.95	11.72	↑	↑
NET ABSORPTION (THOUSANDS SF)	74	(312)	↑	↑
VACANCY RATE	11.0%	9.3%	↓	↓
UNDER CONSTRUCTION (THOUSAND SF)	610	940	↑	↑
ASKING RENT, NNN (PSF)	$41.70	$40.45	↑	↑
YTD NIH STATE GRANTS (BILLIONS)	$1.16	$0.98	↑	↑

VACANCY RATE



Source: TW Research. CoStar

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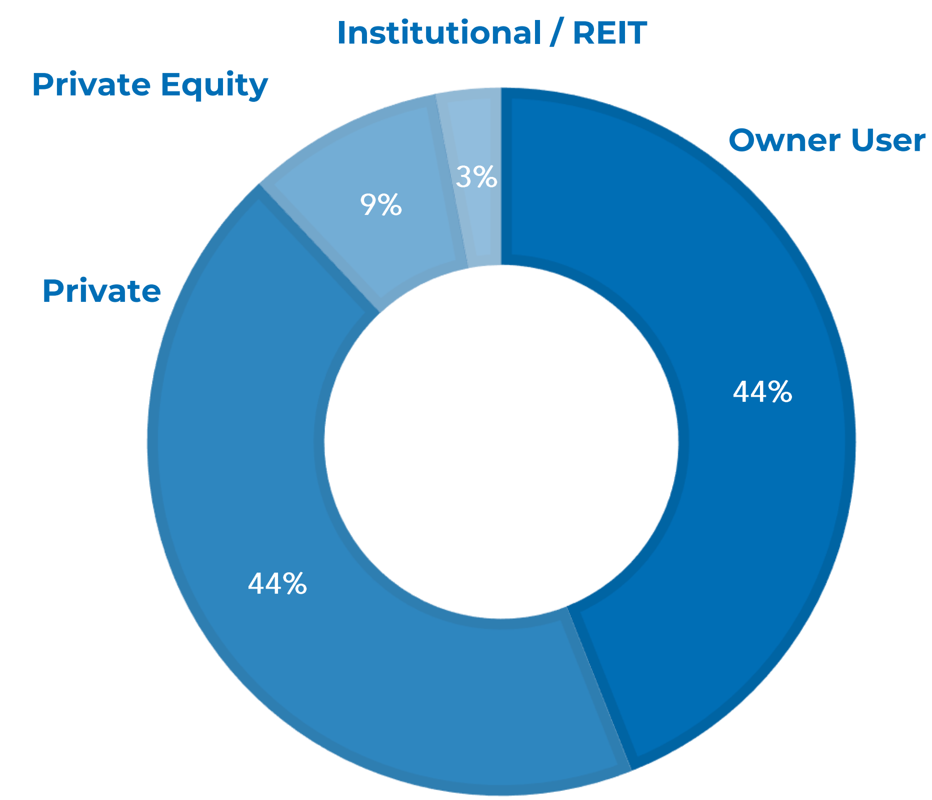
LOCAL NIH FUNDING | 2023

ORGANIZATION	AWARDS	FUNDING	CITY
Northwestern University	699	$395,241,147	Chicago
University Of Chicago	454	$253,751,156	Chicago
University Of Illinois At Chicago	364	$150,801,795	Chicago
University Of Illinois	189	$75,757,069	Champaign
Rush University Medical Center	105	$69,949,648	Chicago
Northwestern University	128	$49,082,494	Chicago
Lurie Children's Hospital	54	$26,878,449	Chicago
Loyola University Chicago	65	$21,863,983	Maywood
Alliance Foundation	3	$11,521,819	Chicago

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

Sterling Bay

Trammell Crow Company

MARK GOODMAN & ASSOCIATES, INC.

LEASE | MID-YEAR 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
Chan-Zuckerberg Biohub	New	1375 West Fulton St	26,000	Fulton
The University of Chicago	New	5201 S Harper Ave	20,000	Hyde Park

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
*No recent sale activity.

TRANSWESTERN

KEY MARKET POINTS

- Houston's ecosystem continues to grow, fueled by the collaboration within The Texas Medical Center.
- Strong preleasing data shows stability of demand
- The area receives the largest share of NIH funding in the state
- Local demographics make for an ideal location for certification trials
- Employment talent pool continues to grow YOY

TRENDLINES	Q3 2023	Q3 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	3.69	3.43	⬆	⬆
NET ABSORPTION (THOUSANDS SF)	20,51	(46.40)	⬆	⬆
VACANCY RATE	11.40%	8.31%	⬆	⬆
UNDER CONSTRUCTION (THOUSAND SF)	670.10	935.70	⬇	⬆
ASKING RENT, NNN (PSF)	$36.75	$38.15	⬇	⬆
YTD NIH STATE GRANTS (BILLIONS)	$1.61	$1.22	⬆	⬆

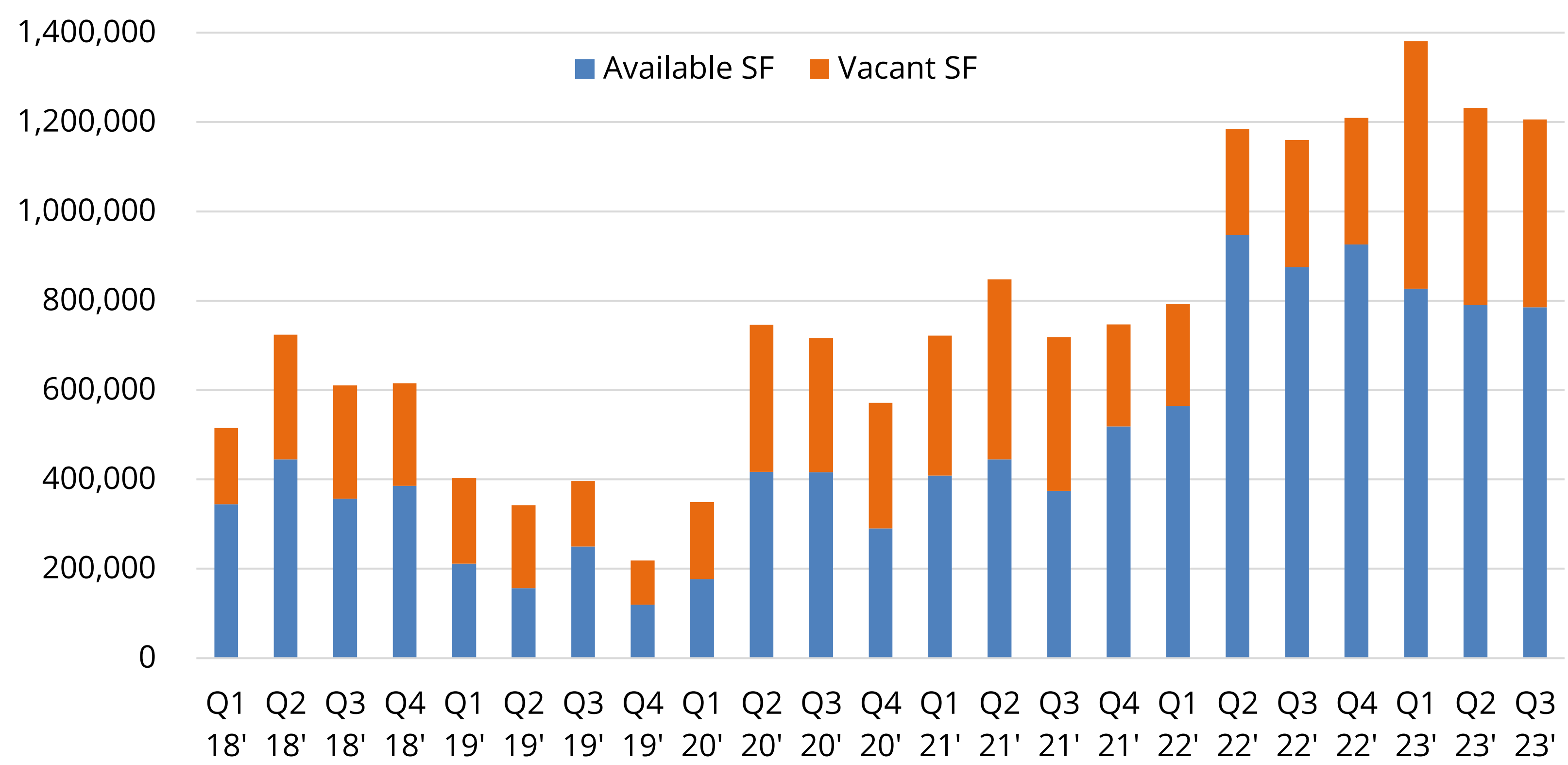
MARKET OVERVIEW

Houston continues to experience consistent growth within the local life sciences market. Industry stakeholders are attracted to all the Houston has to offer. The Texas Medical Center ecosystem is powerful, allowing for growth and collaboration. Johnson and Johnson's JLABS furthered its expansion within the TMC.

Alexandria Real Estate recently delivered its phase one in the Woodlands, totaling 124,000 SF at 8800 Technology Forest Place. The development is designed to ignite innovation with flexible laboratory, office and biomanufacturing space. The TMC3 development is nearing phase one completion. The TCM3 Collaborative Building is fully leased; Beacon's Dynamic One of 350,000 SF has strong preleasing activity.

Local midyear venture capital funding has exceeded $260M. While Houston's NIH funding has totaled $1.60B in the same period. Houston continues to receive a healthy portion of the NIH grants awarded in Texas. Despite being a second-tier market, Houston competes with San Diego and Raleigh Durham for NIH funding.

AVAILABLE INVENTORY



Source: TW Research. CoStar

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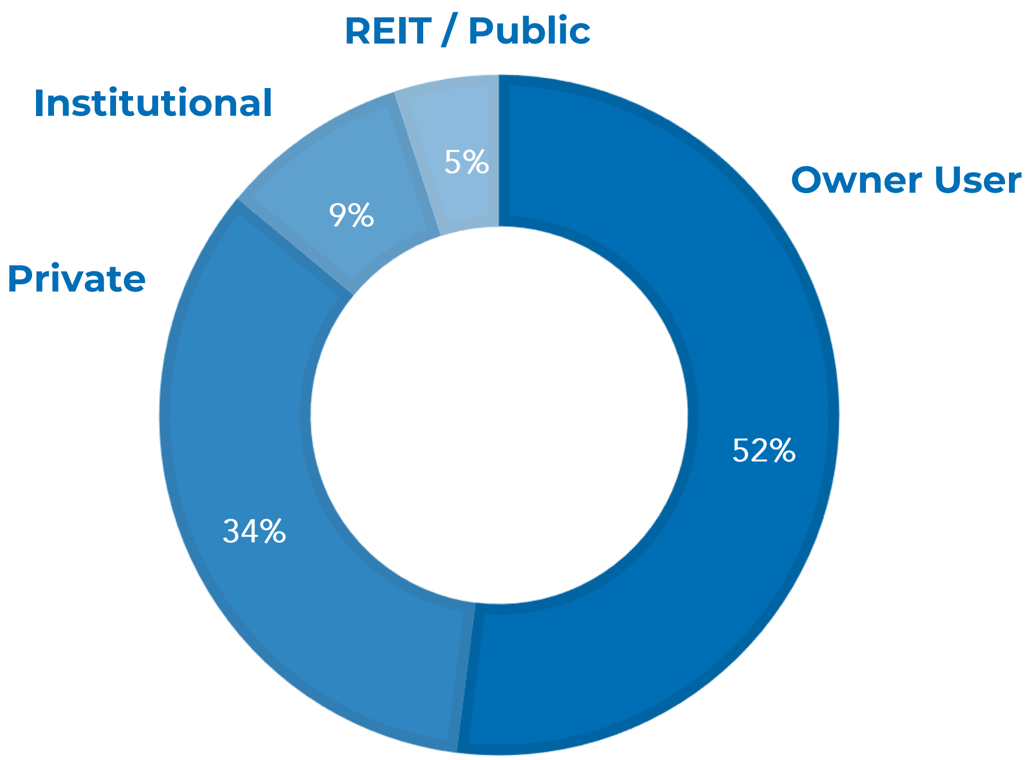
LOCAL NIH FUNDING | 2023

ORGANIZATION	AWARDS	FUNDING	CITY
Baylor College Of Medicine	608	$306,172,575	Houston
University Of Tx Md Anderson	341	$176,883,216	Houston
University Of Texas Health Science Center	308	$137,591,734	Houston
University Of Texas Med Br Galveston	142	$103,374,688	Galveston
University Of Houston	116	$41,471,231	Houston
Methodist Hospital Research Inst	71	$32,534,260	Houston
Rice University	77	$29,654,653	Houston
Texas Heart Institute	6	$3,652,411	Houston
Bivacor, Inc.	3	$3,128,775	Houston
7 Hills Pharma, LLC	2	$1,926,091	Houston

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

TMC | TEXAS MEDICAL CENTER

ATM

BEACON CAPITAL PARTNERS

LEASE | MID-YEAR 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
Baylor College of Medicine	New	1840 Dynamic Way	114,249	TMC
Houston Methodist	New	1840 Dynamic Way	50,000	TMC
Nurix Therapeutics Inc.	New	8800 Technology Forest Place	46,000	Woodlands
Portal Innovations	New	7255 Helix Park Ave	30,000	TMC
Immatics	New	2450 Holcombe Road	28,070	TMC
Memorial Hermann	Expansion	2450 Holcombe Road	13,125	TMC
Packgene Biotech Inc.	Renewal	9310 Kirby Drive	13,000	Southwest
VenoStent	New	2450 Holcombe Road	12,612	TMC

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

KEY MARKET POINTS

- Majority of inventory is established owner user
- Pandemic fueled biomanufacturing regained local interest
- Muted NIH funding, relative to market inventory size
- Access to mature transport means, allows to expedient distribution
- Employment growth has stabilized
- Demographics within the region support diversified drug trials

MARKET OVERVIEW

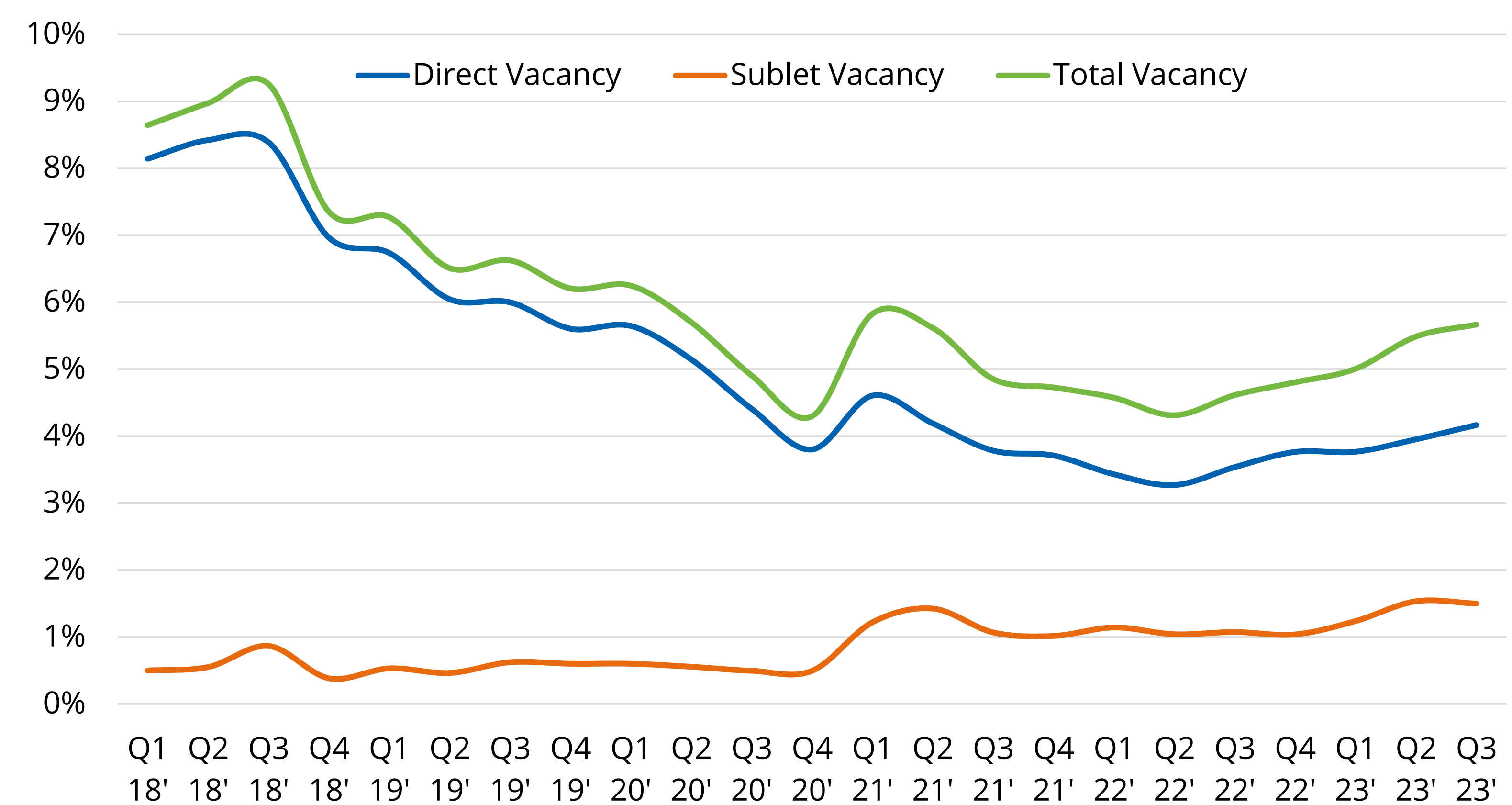
New Jersey is foundational to the life sciences industry. Coined the birthplace of immunotherapy, New Jersey is home to 3,500 life sciences companies that employ 410,000 individuals. Biomanufacturing within the region have recently regained attention, as legacy facilities offer increased compacity with modern manufacturing practices.

North New Jersey is supported by established transport infrastructure; rail, trucking, and seaports. These options make for efficient distribution of goods, both raw and finished. This access to transportation allows for the flow goods to the northeast, home to 22% of the national population.

The talent pool is fueled by the 28 post-secondary academic institutions in the area, awarding over to 100,000 degrees in 2022. Despite the macroeconomic headwinds, the New Jersey market continues to show its strength and resiliency with being anchored by established multinational owner users. Recent large campus relocations have allowed for new investment to enter the market.

TRENDLINES	Q3 2023	Q3 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	30.10	30.10	↔	↑
NET ABSORPTION (THOUSANDS SF)	(57,84)	(96.97)	↑	↑
VACANCY RATE	5.70%	4.62%	↑	↑
UNDER CONSTRUCTION (MSF)	.550	.550	↔	↔
ASKING RENT, NNN (PSF)	$35.59	$34.50	↑	↑
YTD NIH STATE GRANTS (MILLIONS)	$359	$333	↑	↑

VACANCY RATE



Source: TW Research. CoStar

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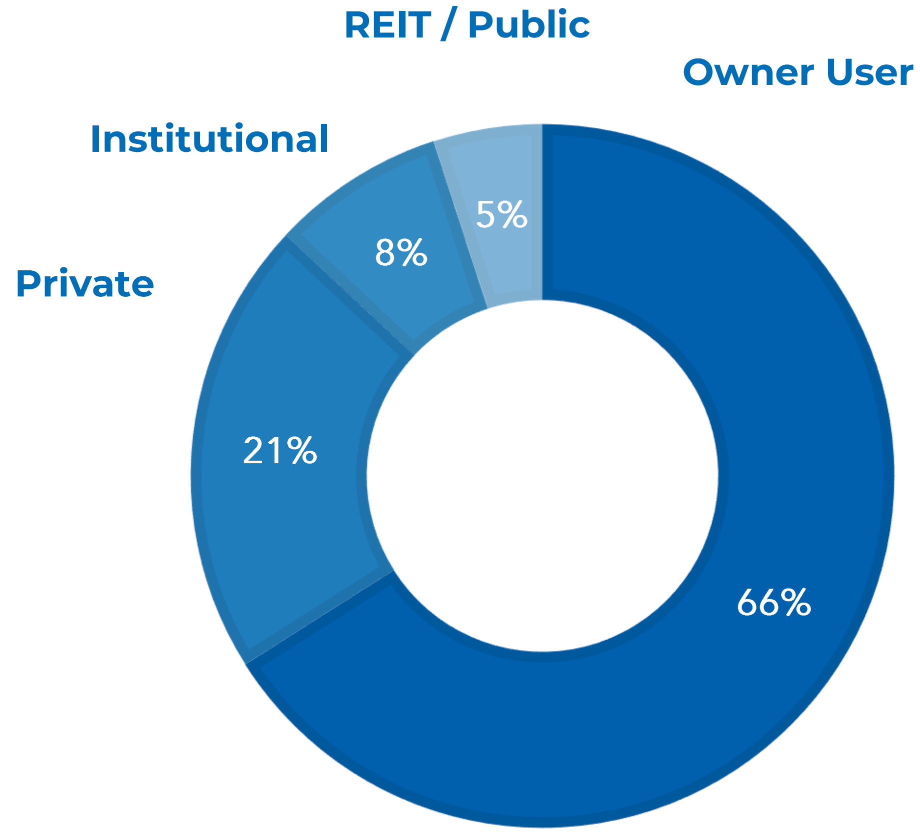
LOCAL NIH FUNDING | 2023

ORGANIZATION	AWARDS	FUNDING	CITY
Rutgers Biomedical	333	$182,713,684	Newark
Rutgers, The State Univ	123	$52,028,876	Piscataway
Princeton University	102	$48,723,055	Princeton
Hackensack University	24	$20,587,660	Hackensack
Rutgers (Newark)	23	$9,472,563	Newark
Cornell Institute Medical	6	$6,623,451	Camden
Rowan University	16	$5,676,720	Glassboro
New Jersey Institute Of Tech	15	$3,686,660	Newark
Park Therapeutics, Inc.	1	$3,329,591	Morristown
Kessler Foundation, Inc.	7	$2,410,981	East Hanover

INVENTORY BUILDING OWNERSHIP



TOP OWNERS: MERCK Johnson & Johnson Bristol-Myers Squibb

LEASE | MID-YEAR 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
Ingredion	Renewal	10 Finderne Ave	150,000	Bridgewater
Reliable Healthcare	New	6 Wheeler Road	130,000	Dayton
Roche Molecular Systems	Renewal	1080 US Highway 202	82,000	Branchburg
Avantor Performance	New	1013 U.S. Highway 202	61,000	Bridgewater
Enzene Biosciences	New	311 Pennington Rock Hill	56,000	Pennington
Chemetall BASF	Renewal	675 Central Ave	39,277	New Providence
EpiBone	New	95 Greene St	29,500	Jersey City

SALE | MID-YEAR 2023

ADDRESS	TYPE	SIZE	PRICE	MARKET
Merk Headquarters Portfolio	Campus	1,944,025	$187,000,000	Central
311 Pennington Rocky Hill	Office	198,000	$67,500,000	Pennington
107 Morgan Lane	Office	44,400	$12,000,000	Plainsboro

Source: TW Research. CoStar, NIH

KEY MARKET POINTS

- Decreased leasing velocity over the last 12-months
- Vacancy rates remain stable over last five-year period
- Top academic institutions fuel a qualified talent pool
- 3.0 University Place development recently delivered 200k SF

MARKET OVERVIEW

Being situated amongst notable life sciences markets, Philadelphia's suburban market has persevered well in 2023. Despite the lull in leasing velocity, the market has managed to maintain a positive absorption throughout the year, a task that large markets haven't been able to compete with.

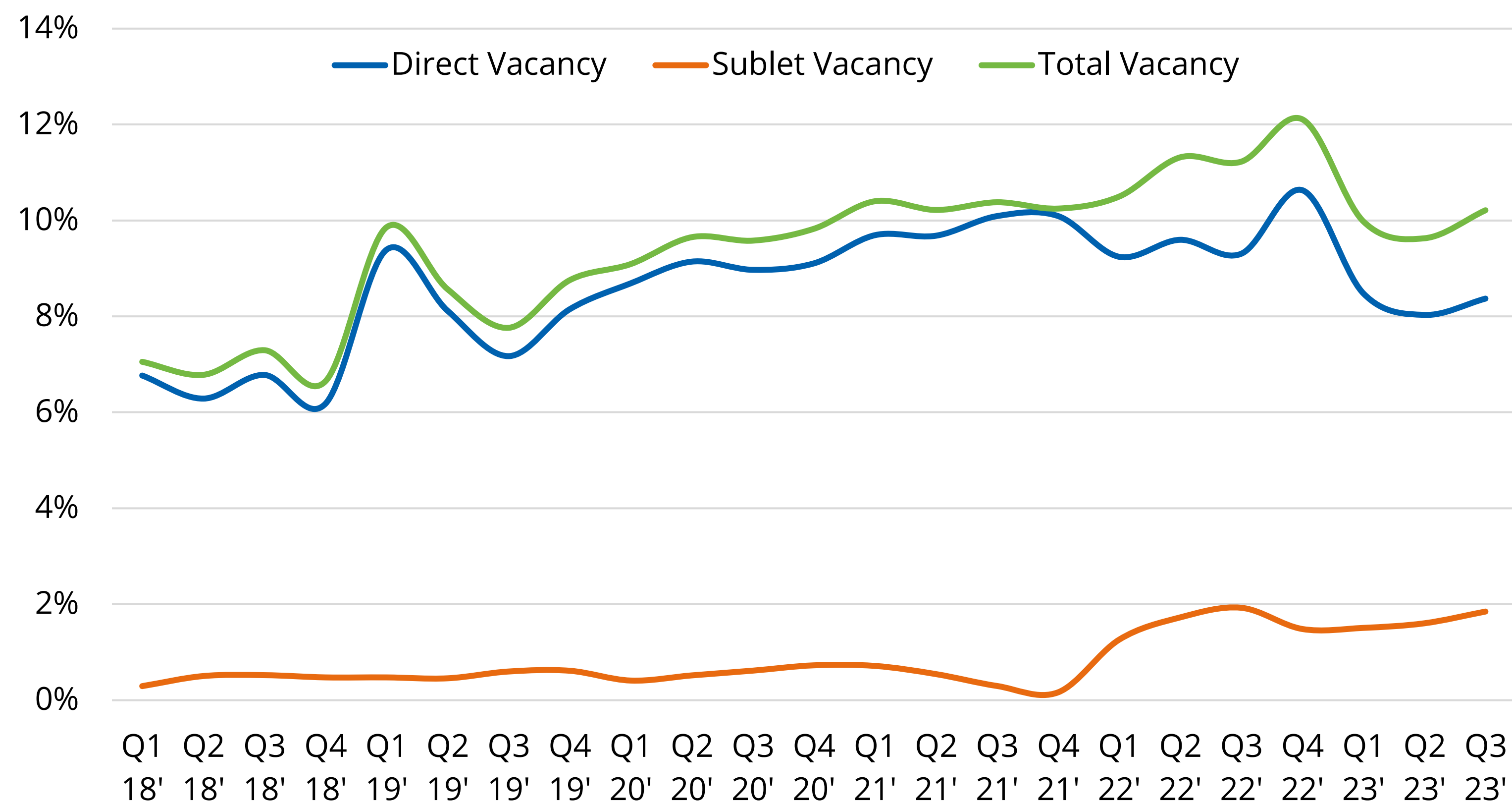
The venture capital funding allocations are well balanced amongst the different rounds (Seed, Series A-D) making it unique relative to other markets. Local VC YTD funding has totaled $233M, significantly weaker than this time last year, totaling $400M. However, NIH grants to the local ecosystem have seen a 9% increase in 2023, a bright spot of optimism amongst a private funding slump.

In August, Pfizer sold one of its campus properties that was currently leased to Dow Chemical; the buyer David Werner Real Estate paid $108M.

Local talent pool is fed by 32 academic institutions, 27 of which have life science adjacent degrees programs. Employment growth is less then other mature markets, averaging 3% annually over the last five years.

TRENDLINES	Q3 2023	Q3 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	23.19	22.47	↑	↑
NET ABSORPTION (THOUSANDS SF)	(135.51)	428.15	↑	↔
VACANCY RATE	10.90%	11.27%	↓	↔
UNDER CONSTRUCTION (MSF)	4.1	3.7	↑	↓
ASKING RENT, FULL SERVICE (PSF)	$40.63	$38.60	↑	↑
YTD NIH STATE GRANTS (BILLIONS)	$2.11	$1.84	↑	↑

VACANCY RATE



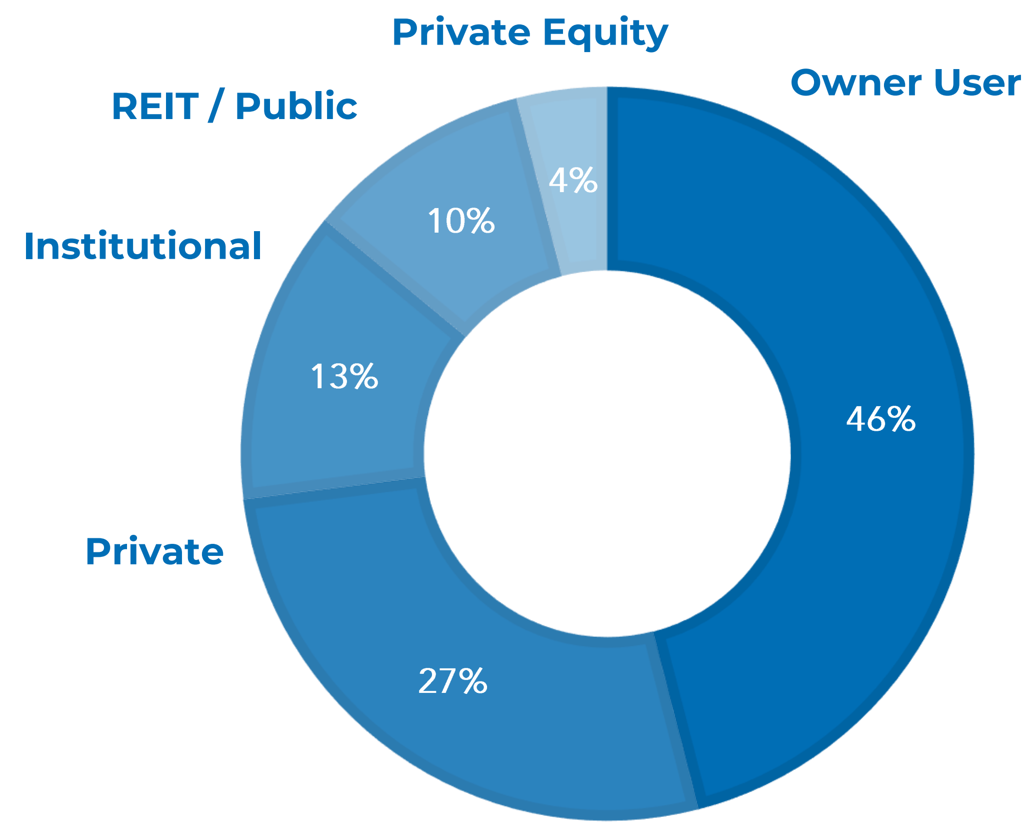
Source: TW Research. CoStar

TRANSWESTERN

LOCAL NIH FUNDING | 2023

ORGANIZATION	AWARDS	FUNDING	CITY
University Of Pennsylvania	1270	$651,631,196	Philadelphia
University Of Pittsburgh At Pittsburgh	1214	$641,387,029	Pittsburgh
Children's Hosp Of Philadelphia	301	$158,173,690	Philadelphia
Pennsylvania State University	199	$77,149,124	University Park
Temple Univ Of The Commonwealth	177	$74,788,352	Philadelphia
Pennsylvania State Univ Hershey Medical	141	$66,215,925	Hershey
Thomas Jefferson University	156	$65,331,419	Philadelphia
Drexel University	143	$59,039,591	Philadelphia
Wistar Institute	51	$42,161,515	Philadelphia
Carnegie Mellon University	81	$38,069,366	Pittsburgh

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

WEXFORD SCIENCE&TECHNOLOGY, LLC

MLP VENTURES, LLC

brandywine REALTY TRUST

LEASE | MID-YEAR 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
Castle Creek Biosciences	Renewal	405 Eagle View Blvd	85,000	Malvern
Eisai	New	-	61,000	Exton
Spark Therapeutics	Direct Lease	709 Swedeland Rd	62,000	King of Prussia
VenatoRX	Renewal	74 E Swedesford Rd	23,500	King of Prussia

SALE | MID-YEAR 2023

ADDRESS	TYPE	SIZE	PRICE	MARKET
400 Arcola Rd	Campus	1,900,000	$108,000,000	Collegeville
466 Devon Park Dr	Office	155,200	$57,000,000	King of Prussia
2450 Hunting Park Ave	Office	232,976	$14,000,000	Suburban Philadelphia

Source: TW Research. CoStar, NIH

KEY MARKET POINTS

- Local market fundamentals remain stable
- One of lowest vacancy rates amongst the life sciences hubs
- Noteworthy NIH funding relative to market size
- Recent uptick in sublease space within the last three quarters
- Future development is poised to increase local activity

MARKET OVERVIEW

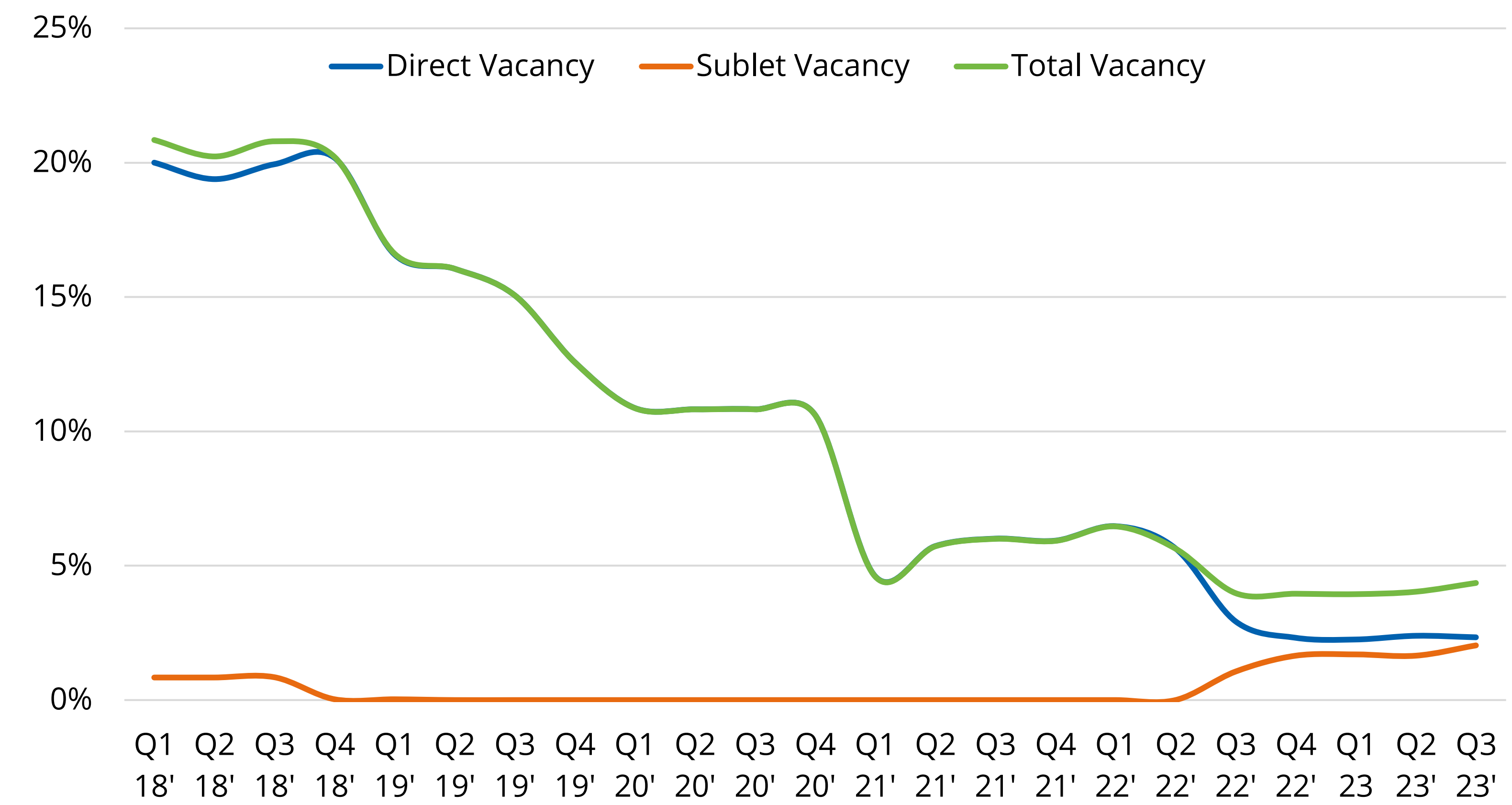
The Raleigh Durham life sciences market remains stable in 2023. Fueled by the agricultural biotechnology sector, the region has been gaining market share and driving innovation for the last two decades.

The market's leasing activity is forecasted increase, boosted by an increased private investment, NIH and VC funding. Eli Lilly and United Therapeutics are set to develop large manufacturing facilities. Additionally, Kriya Therapeutics secured $145M in funding to expand locally. These noteworthy investments will likely push local infrastructure development to meet the demand, ultimately making the market more welcoming to future tenant activity.

The low cost of living, paired with an abundance of academic institutions makes this market attractive to future users focused on talent. The matured life science market has all the supportive infrastructure and transportation routes to help sustain future growth.

TRENDLINES	Q3 2023	Q3 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	10.73	10.32	↑	↔
NET ABSORPTION (THOUSANDS SF)	(34.07)	173,16	↓	↔
VACANCY RATE	5.48%	4.44%	↑	↑
UNDER CONSTRUCTION (MSF)	1.10	1.50	↓	↔
ASKING RENT, NNN (PSF)	$28.24	$27.88	↑	↑
YTD NIH STATE GRANTS (BILLIONS)	$1.97	$1.69	↑	↑

VACANCY RATE

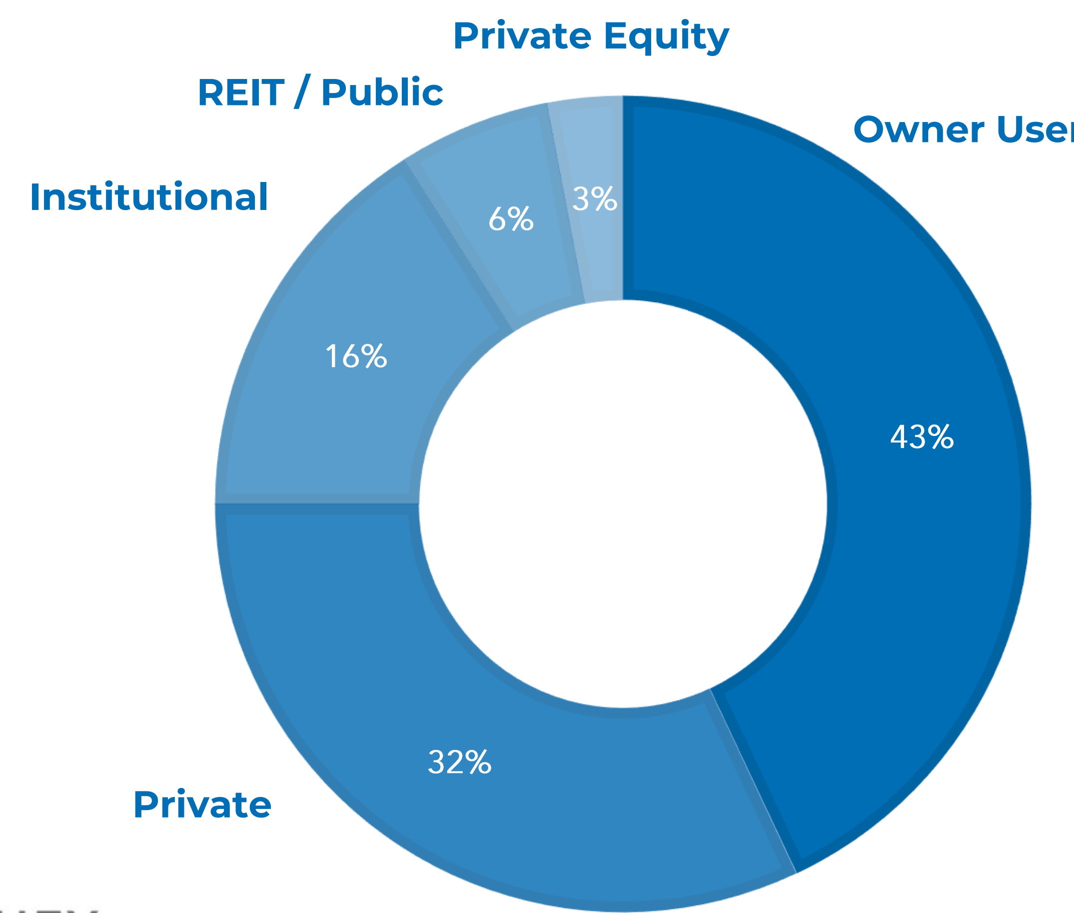


Source: TW Research. CoStar

LOCAL NIH FUNDING | 2023

ORGANIZATION	AWARDS	FUNDING	CITY
Duke University	970	$609,267,868	Durham
Research Triangle Institute	70	$503,809,542	Research Triangle Park
Univ Of North Carolina Ch.	983	$487,330,542	Chapel Hill
Wake Forest University Health	252	$140,744,476	Winston
North Carolina State University Raleigh	113	$41,727,917	Raleigh
Family Health International	3	$23,824,725	Durham
Rho Federal Systems Division, Inc.	4	$22,465,655	Durham
Epicypher, Inc.	14	$12,622,074	Research Triangle Park
East Carolina University	26	$9,263,765	Greenville
University Of North Carolina Charlotte	32	$9,164,544	Charlotte

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

ALEXANDRIA

LONGFELLOW

TRINITY CAPITAL

LEASE | MID-YEAR 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
Catalent	New	951 Aviation Pkwy	130,875	RTP
ILS	Renewal	601 Keystone Park	30,000	Morrisville
Isolere	New	5 Laboratory Drive	17,000	RTP
Spring Works	New	9 Laboratory Drive	15,000	RTP

SALE | MID-YEAR 2023

ADDRESS	TYPE	SIZE	PRICE	MARKET
710 West Main Street	Lab	165,000	113,000,000	Durham

Source: TW Research. CoStar, NIH

KEY MARKET POINTS

- New inventory set to be delivered within the next 12-18 months
- Proximity to South California's mature transportation infrastructure
- Strong employment growth is forecasted to continue
- Private and public funding sources support local ecosystem

MARKET OVERVIEW

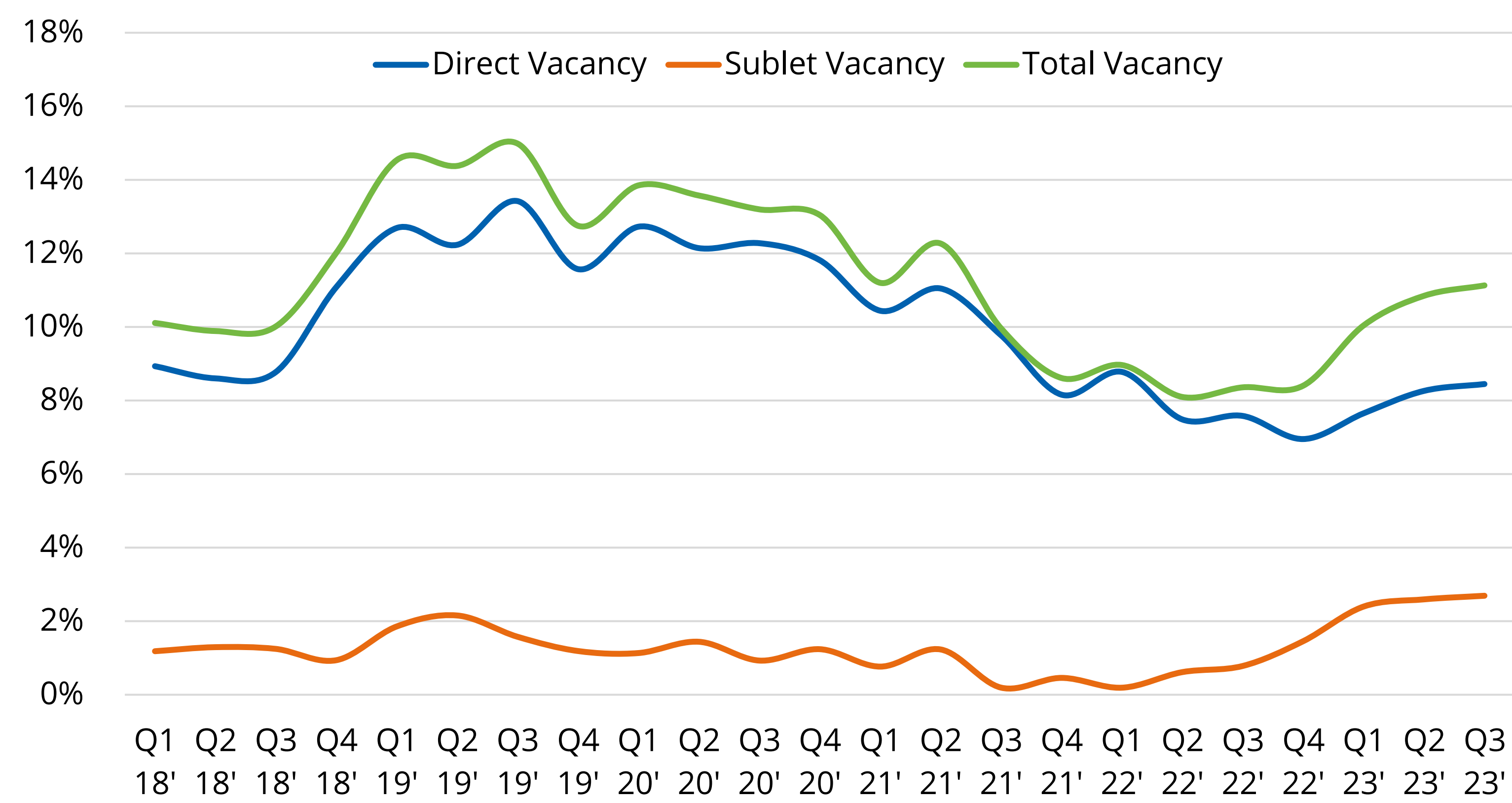
San Diego's life science market continues to experience rapid growth. Both owners and users have embraced the positive economic drivers within the Southern California region. The pace of sales transactions has slowed, totaling $235 million for the first three quarters of 2023.

Local venture capital funding returned to pracademic levels, raising approx. $1.9B. San Diego's NIH funding is has increased over 2022, ticking up to $1.10B. Southern California's region total is $2.0B

San Diego's industry employment has grown 21% since 2018 and is slated to remain on trend till at least 2030. The area is home to 23 higher education institutions that help supply a well-qualified talent pool with 10,000 graduates per year, of which 3,100 are STEM related. Additionally, the region's life science employment statics show the median age for the workforce is 31, which is notably less than the other major markets. The development pipeline remains robust totaling 3.44 MSF, despite large intuitions shelving projects for favorable markets. The 2024 BIO International Conference is slated to be hosted in San Diego.

TRENDLINES	Q3 2023	Q3 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	17.78	17.59	↑	↑
NET ABSORPTION (THOUSANDS SF)	(50.50)	88.04)	↑	↓
VACANCY RATE	11.10%	8.25%	↑	↑
UNDER CONSTRUCTION (MSF)	2.65	3.15	↓	↓
ASKING RENT, NNN (PSF)	$46.48	$45,70	↑	↓
YTD NIH STATE GRANTS (BILLIONS)	$4.95	$4.66	↑	↑

VACANCY RATE



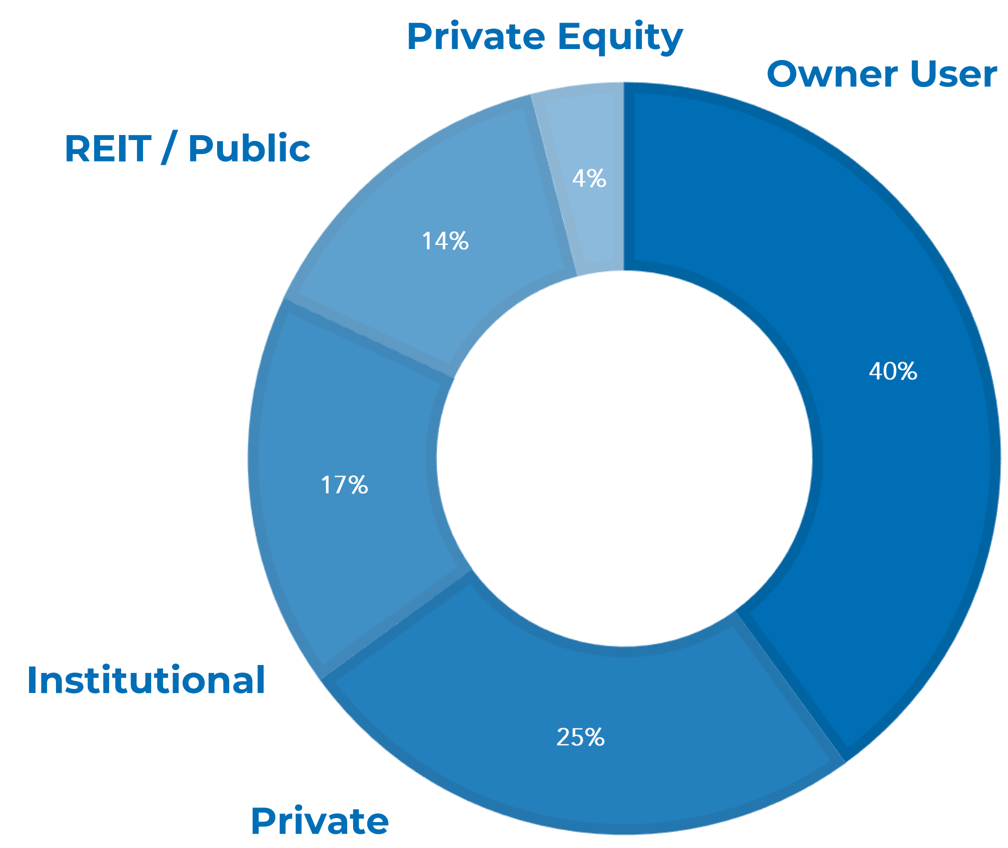
Source: TW Research. CoStar

TRANSWESTERN

LOCAL NIH FUNDING | 2023

ORGANIZATION	AWARDS	FUNDING	CITY
UNIVERSITY OF CALIFORNIA, SAN DIEGO	1081	$569,797,447	La Jolla
SCRIPPS RESEARCH INSTITUTE, THE	207	$221,039,261	La Jolla
SALK INSTITUTE FOR BIOLOGICAL STUDIES	82	$68,740,206	La Jolla
SANFORD BURNHAM PREBYS MEDICAL DISCOVERY	63	$53,185,672	La Jolla
SAN DIEGO STATE UNIVERSITY	74	$34,415,913	San Diego
LA JOLLA INSTITUTE FOR IMMUNOLOGY	35	$33,328,529	La Jolla
VETERANS MEDICAL RESEARCH FDN/SAN DIEGO	17	$6,147,618	San Diego
SAN DIEGO BIOMEDICAL RESEARCH INSTITUTE	12	$5,670,155	San Diego
PROTEOGENOMICS RESEARCH INSTIT/SYS/ MED	4	$4,539,807	La Jolla
CENTER FOR INNOVATIVE PUBLIC HEALTH	5	$4,323,709	San Clemente
J. CRAIG VENTER INSTITUTE, INC.	6	$4,125,903	La Jolla

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

Blackstone

Healthpeak® PROPERTIES

ALEXANDRIA.

LEASE | MID-YEAR 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
ASML	New	16705 Via del Campo Ct	55,000	San Diego
Agilent Technologies	Renewal	11011 Torrey Pines Rd	32,300	Torrey Pines
Precision Diagnostics	Renewal	4215 Sorrento Valley Blvd	30,500	Sorrento Valley
Neurocrine	Renewal	12770 El Camino Real	26,000	Del Mar Heights
Veracyte	Renewal	-	22,500	Sorrento Valley
Tr1X	New	-	21,500	UTC

SALE | MID-YEAR 2023

ADDRESS	SIZE	PRICE	MARKET
3215 Merryfield Row	170,523	$149,000,000	Torrey Pines
9625 Towne Centre Dr	163,600	$112,400,000	UTC
11119 N Torrey Pines Rd	72,000	$86,000,000	Torrey Pines

Source: TW Research. CoStar, NIH

KEY MARKET POINTS

- Vacancy rates largely driven by new deliveries
- Employment growth outpaces national average by nearly double
- Interest rate hikes mute sales transactions
- Noteworthy uptick in sublease space in last 12-months

MARKET OVERVIEW

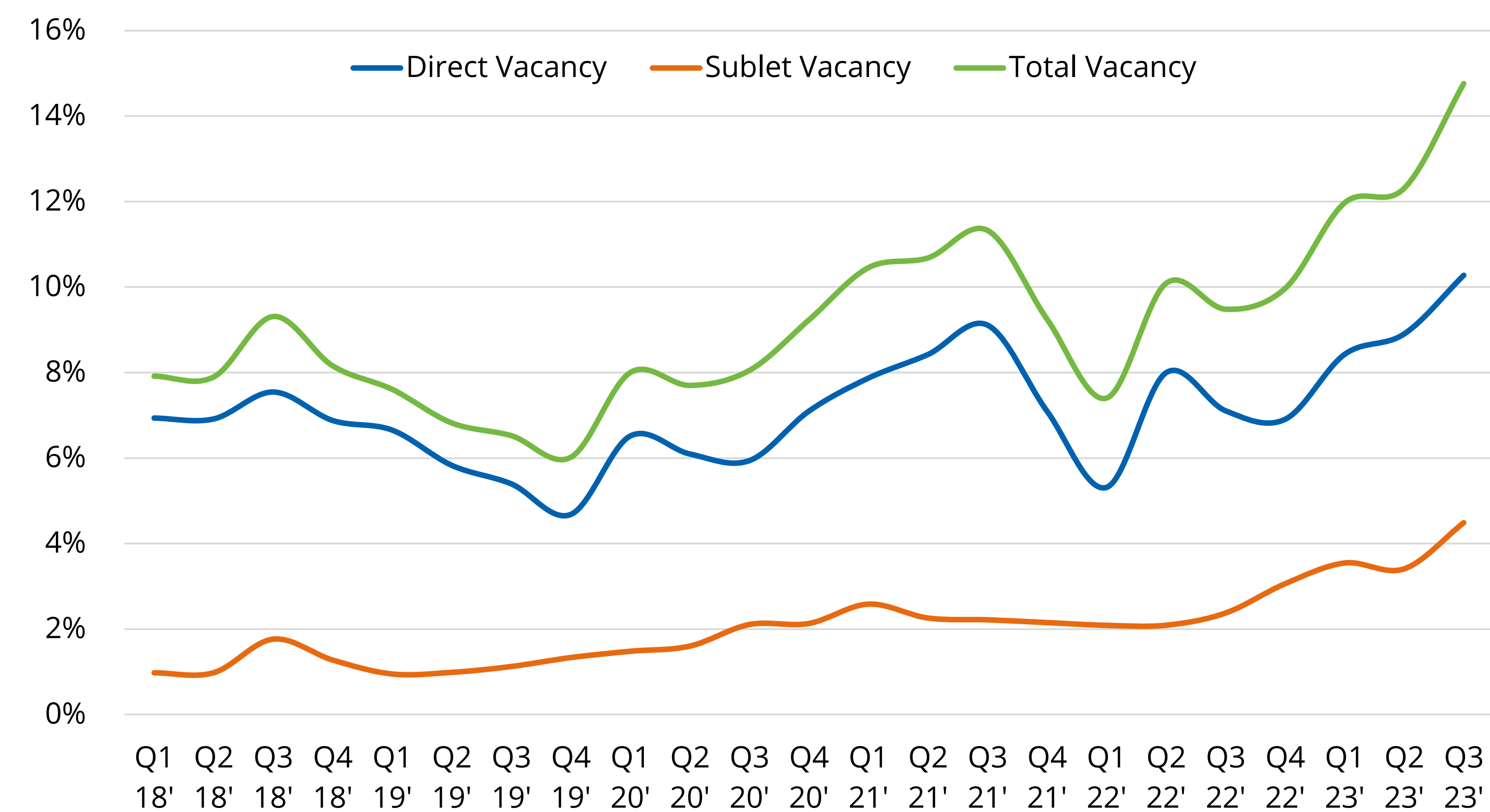
The San Francisco Bay Area is the second largest life sciences market in the nation, encompassing a total of nine counties. The entire local ecosystem is fed by a steady demand from owners, users, investors, and top tier academic institutions. From startups in incubators to large multinational industry leaders, the mix of core competencies aids to the advancement of local users. Despatie the widespread commercial real estate industry turbulence, the companies within these specialized assets have heeded the economic concern. Shifting to a more conservative mode, leading to a decreased leasing volumes and upticks in sublease space.

The development pipeline continues to be robust, with delivered vacant supply pushing the vacancy rates higher. The regions sales transactions have nearly stalled, as interest rate hikes weigh on the market. Mid-year leasing continues to show strength and resiliency, some tenants taking the opportunity to relocating within the market. Rent growth quarter over quarter was 2.0%, sustaining a positive trend.

Record high public funding paired with recovering monument with venture funding reflect the strength of the greater area. Local life sciences employment growth outpaces the national average, at 4.6% compared to 2.6%. The region's employment pool is fed by the largest makeup of highly regarded academic institutions. Combine robust funding sources with a highly qualified workforce, boosted by a supportive academic institutions, the region is primed to experience continued success.

TRENDLINES	Q3 2023	Q3 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	45.23	44.27	↑	↑
NET ABSORPTION (THOUSANDS SF)	(333.0)	483.0	↓	↑
VACANCY RATE	14.80%	9.56%	↑	↑
UNDER CONSTRUCTION (MSF)	12.20	13.35	↓	↓
ASKING RENT, NNN (PSF)	$56.88	$57.97	↓	↑
YTD NIH STATE GRANTS (BILLIONS)	$4.95	$4.77	↑	↑

VACANCY RATE

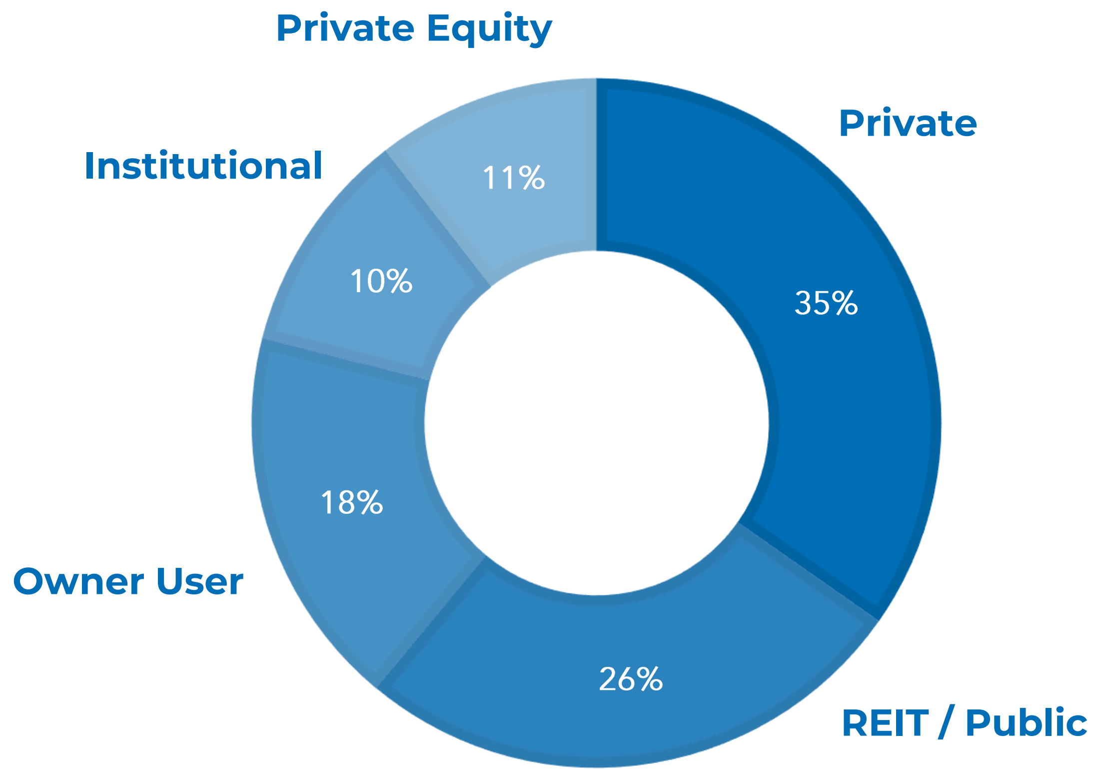


Source: TW Research. CoStar

LOCAL NIH FUNDING AWARDS

ORGANIZATION	AWARDS	FUNDING	CITY
University Of California, San Francisco	1,435	$720,236,546	San Francisco
Stanford University	1,134	$626,387,484	Stanford
University Of California, Davis	553	$275,377,515	Davis
University Of California, Berkeley	323	$137,762,533	Berkeley
Kaiser Foundation Research Institute	113	$83,626,435	Oakland
Northern California Institute/Res/Edu	28	$48,861,310	San Francisco
University Of California, Santa Cruz	98	$44,467,491	Santa Cruz
J. David Gladstone Institutes	48	$40,663,812	San Francisco
Public Health Institute	17	$32,081,379	Oakland
University Of California, The Lawrence Berk Lab	23	$21,108,764	Berkeley
Buck Institute For Research On Aging	28	$17,722,149	Novato

INVENTORY BUILDING OWNERSHIP



LEASE | MID-YEAR 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
Pliant Therapeutics, inc.	New	331 Oyster Point Blvd	100,678	South San Francisco
Biomerieux	New	130 Baytech Drive	84,516	Silicon Valley
IOTA Biosciences, inc.	Renewal	400 Wind River Way	53,545	Alameda
Ideaya Biosciences	New	5000 Shoreline Court	44,000	South San Francisco
Centrillion Technologies	Renewal	2500 Faber Place	38,000	Palo Alto
Vaxcyte, Inc.	New	825 Industrial Road	36,593	San Carlos
Harpoon Therapeutics	Sublease	131 Oyster Point Blvd	34,988	South San Francisco
Centrillion Technologies	Renewal	2500 Faber Place	32,820	Silicon Valley

TOP OWNERS:

Healthpeak® PROPERTIES

ALEXANDRIA.

Blackstone

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

KEY MARKET POINTS

- Asking rate increases tied to new deliveries within the last 12-months
- 2023 yielded record NIH investment into the region
- Development pipeline is largely slated to deliver within 24-months
- Net Absorption ticks positive in second quarter

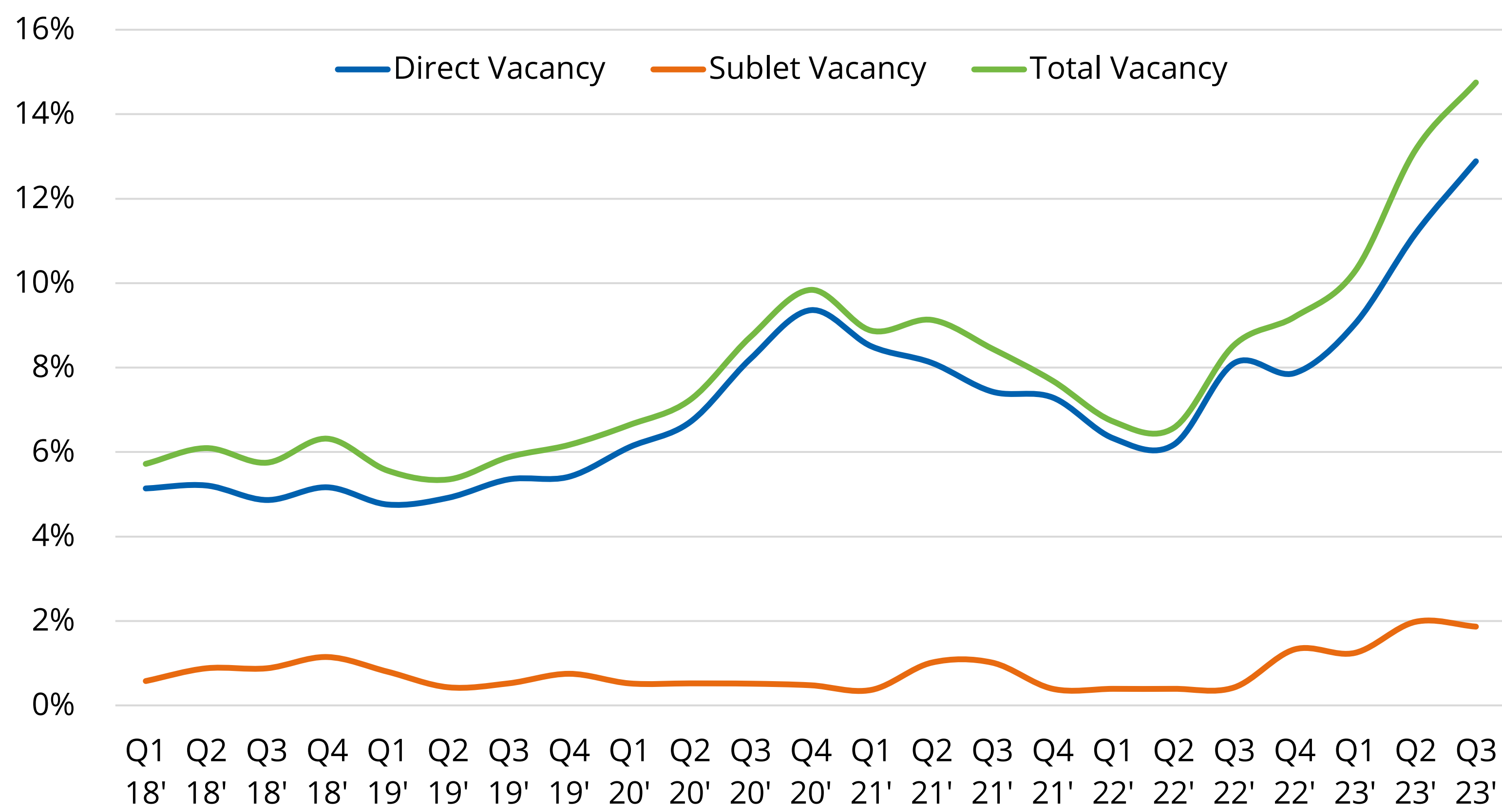
MARKET OVERVIEW

The greater Washington DC life sciences market remains stable relative to other clusters. The region's strength is supported by the National Institute of Health (NIH), the Federal Drug Administration (FDA) and the National Institute of Allergy and Infectious Diseases (NIAID). These governmental institutions continue to be the rudder steering life science innovation. Local academic institutions preserve their spots as top grant recipients, being awarded a near record $2.05B in 2023. Private firms working closely with these two foundational funding sources benefit to their proximity along the I-270 Corridor.

The DC market is not immune from the widespread macroeconomic headwinds effecting comer real estate. The interest rate hikes have slowed transaction and investment velocity. Vacancy rates have slowly increased over the last 12-months, driven by recent deliveries of new inventory. The Operation Warp Speed investment is still felt within the region, as firms boosted by act continue to grow. Rents within the market have been improved over the last two years, from first generation space yielding a premium.

TRENDLINES	Q3 2023	Q3 2022	ONE-YEAR TREND	ONE-YEAR FORECAST
INVENTORY (MSF)	10.86	10.11	↑	↑
NET ABSORPTION (THOUSANDS SF)	27.86	(90.62)	↑	↔
VACANCY RATE	13.80%	8.50%	↑	↔
UNDER CONSTRUCTION (MSF)	1.05	1.17	↓	↓
ASKING RENT, NNN (PSF)	$53.03	$48.77	↑	↑
YTD NIH DMV GRANTS (BILLIONS)	$2.05	$1.94	↑	↑

VACANCY RATE

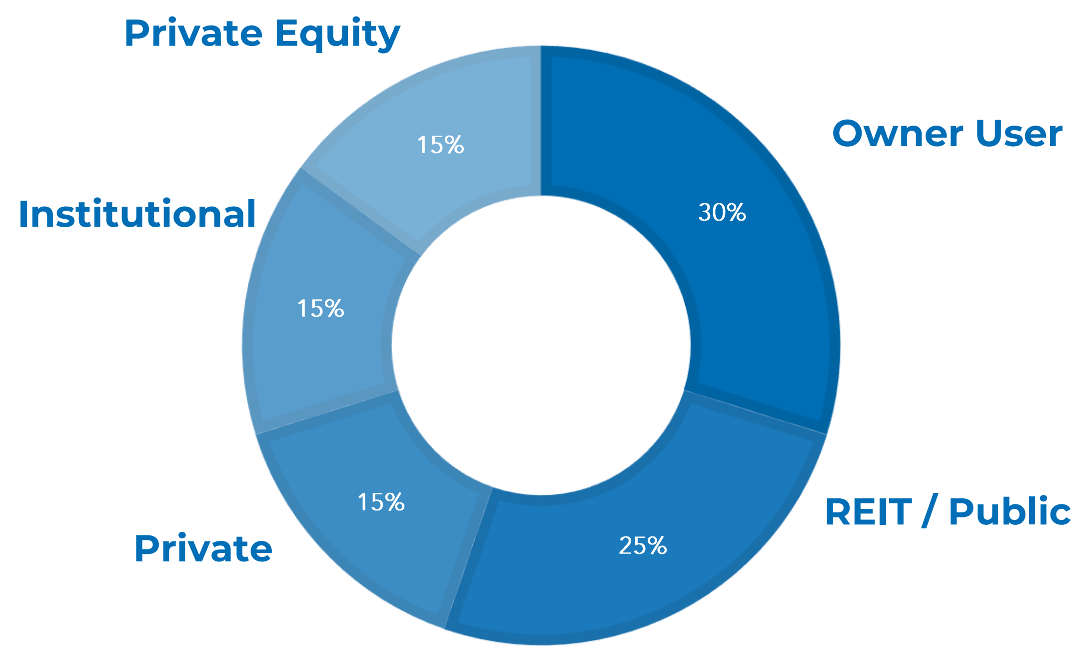


Source: TW Research. CoStar

LOCAL NIH FUNDING AWARDS I 2023

ORGANIZATION	AWARDS	FUNDING	CITY
Johns Hopkins University	1411	$786,942,854	Baltimore
University Of Maryland Baltimore	398	$199,072,287	Baltimore
University Of Virginia	428	$195,737,528	Charlottesville
Virginia Commonwealth University	251	$102,111,540	Richmond
George Washington University	121	$73,054,344	Washington
Univ Of Maryland, College Park	147	$59,886,334	College Park
Virginia Polytechnic Institute	144	$54,194,708	Blacksburg
Georgetown University	130	$52,677,904	Washington
University Of Delaware	95	$47,615,926	Newark
Children's Research Institute	77	$32,071,360	Washington

INVENTORY BUILDING OWNERSHIP



TOP OWNERS:

ALEXANDRIA

AstraZeneca

MATAN

LEASE I MID-YEAR 2023

TENANT	TYPE	ADDRESS	SIZE	MARKET
MacroGenics	New	9704 Medical Center Drive	122,601	Rockville
AstraZeneca	New	9950 Medical Center Dr	84,264	Rockville
Charles River Lab	New	9603 Medical Center Drive	47,400	Rockville
ICT	New	50 W Gude Drive	11,900	Rockville

SALE I MID-YEAR 2023

ADDRESS	SIZE	PRICE	MARKET
9615 Medical Center Dr	65,529	$43,000,000	North Rockville

Source: TW Research. CoStar, NIH

Market	Inventory Square Feet	Overall Vacancy Rate	Net Absorption	12-Month Net Absorption	Asking Rents	Annual Rent Change	Under Construction
Boston	65,837,100	10.71%	(60,510)	579,000	$56.84	9.4%	7,560,000
Chicago	11,951,200	11.00%	74,150	153,000	$41.77	3.0%	610,000
Houston	3,690,100	11.40%	20,518	336,000	$36.75	3.8%	670,000
New Jersey	30,180,700	5.70%	(57,840)	(527,000)	$35.59	2.9%	550,000
New York	3,643,816	28.00%	31,550	152,000	$55.00	3.7%	350,000
Philadelphia	23,197,900	10.20%	(135,400)	714,000	$40.63	5.0%	4,100,000
Raleigh/Durham	10,436,718	5.48%	(34,070)	(74,500)	$28.24	1.2%	1,100,000
San Diego	17,781,000	11.10%	(50,500)	(350,000)	$46.48	1.5%	2,650,000
San Francisco	45,230,600	14.80%	(533,000)	(1,900,000)	$56.88	(1.8%)	12,200,000
Washington DC	10,860,000	13.75%	27,860	13,000	$53.03	7.8%	1,050,000
TOTAL	222,809,000	12.21%	(682,500)	(904,000)	$48.72	3.6%	32,477,362

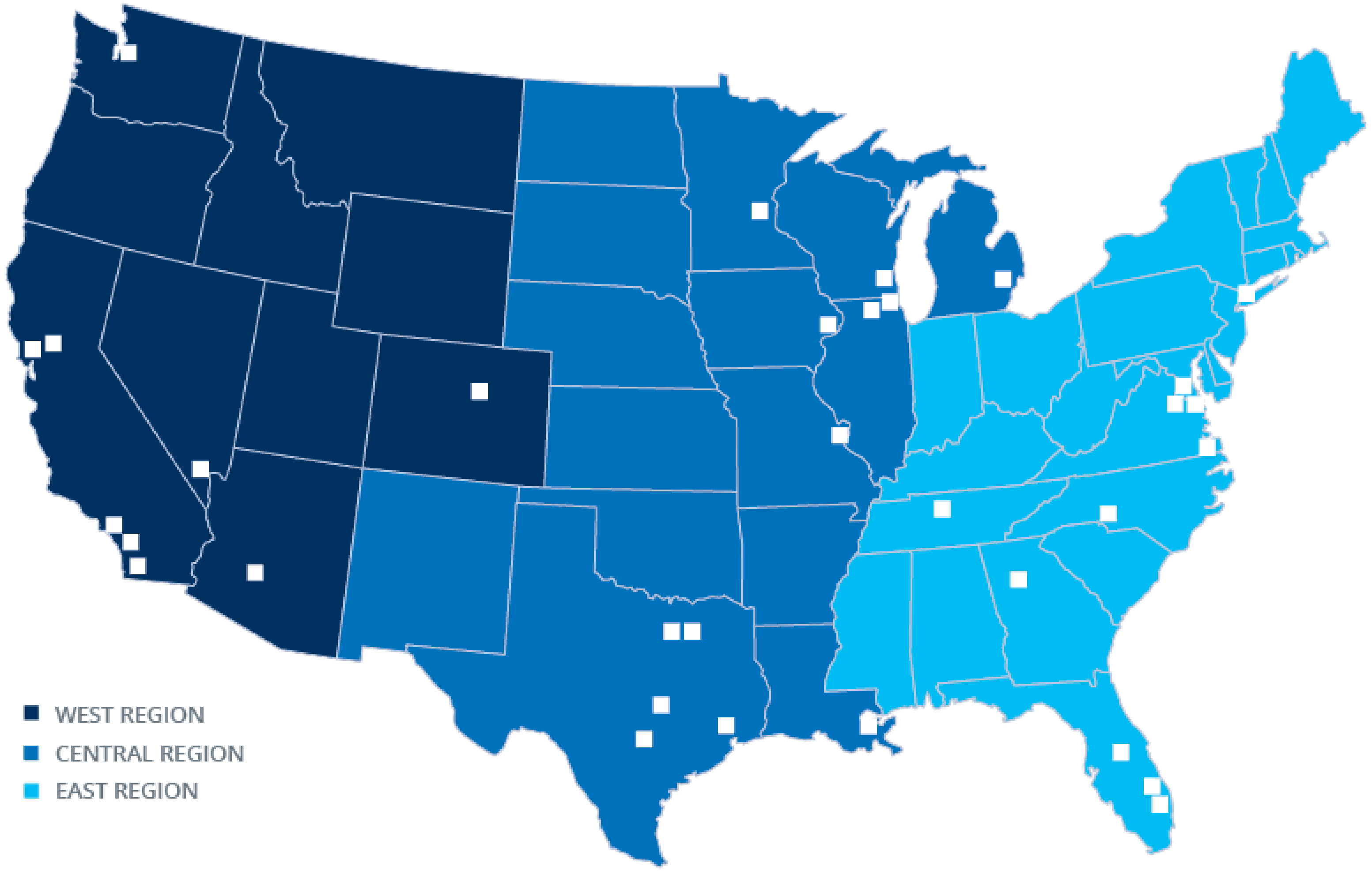
Source: TW Research. CoStar

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

VENTURES (TWV)

Opportunistic Investments
Special Situations
Integrated Operating Partnerships

ROH

Hospitality Integration
Asset Repositioning
Boutique Hotel Development

TRANSWESTERN

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ABOUT TRANSWESTERN

Five 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 that are 50,000 SF and greater. 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.

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