



LIFE SCIENCES

SECTOR SNAPSHOT 2022

ADVANCECT
CONNECTICUT

TABLE OF CONTENTS

About.....	3
Overview.....	4
Life Sciences Workforce.....	5
Life Sciences Ecosystem.....	6
Cost Advantage.....	7
Talent.....	8
Talent Ecosystem.....	9
Educational Pipeline.....	10
Assets.....	11
Talent Pipeline.....	12
Real Estate.....	13
Real Estate Market.....	14
Incubators.....	15
Access to Capital.....	16
Venture Capital.....	17
IPOs and M&A.....	18
IP Driving Investment.....	19
R&D Funding.....	20
Industry Strengths.....	21
Jobs.....	22
GRP.....	23
Establishments.....	24
Subsector Industries.....	25
Metros.....	26
Standout Industries.....	27
Contact.....	28



ABOUT ADVANCECT



OUR MISSION

AdvanceCT strives to build a place where business, government, higher education and nonprofits come together to implement high impact and inclusive economic development solutions to advance the overall competitiveness of Connecticut.

ECONOMIC DEVELOPMENT

AdvanceCT is a private nonprofit corporation that drives job creation and new capital investment in Connecticut through high-impact economic development including business attraction, retention, and expansion.

WHAT WE DO

AdvanceCT works in close cooperation with the Connecticut Department of Economic and Community Development (DECD), the private sector, and various state, regional, and local partners to promote Connecticut as a place to do business. Our team is dedicated to ensuring that industries expand, residents thrive, and businesses feel at home in our state.

LEARN MORE AT [ADVANCECT.ORG](https://www.advancect.org) ➤



23.6K
Jobs



1,000
Establishments



\$6 Billion
GRP

SOURCE: EMSI BURNING GLASS 2020; ADVANCECT CALCULATIONS

Scaled by population, Connecticut is:

#3 state for **bioscience venture capital investment**

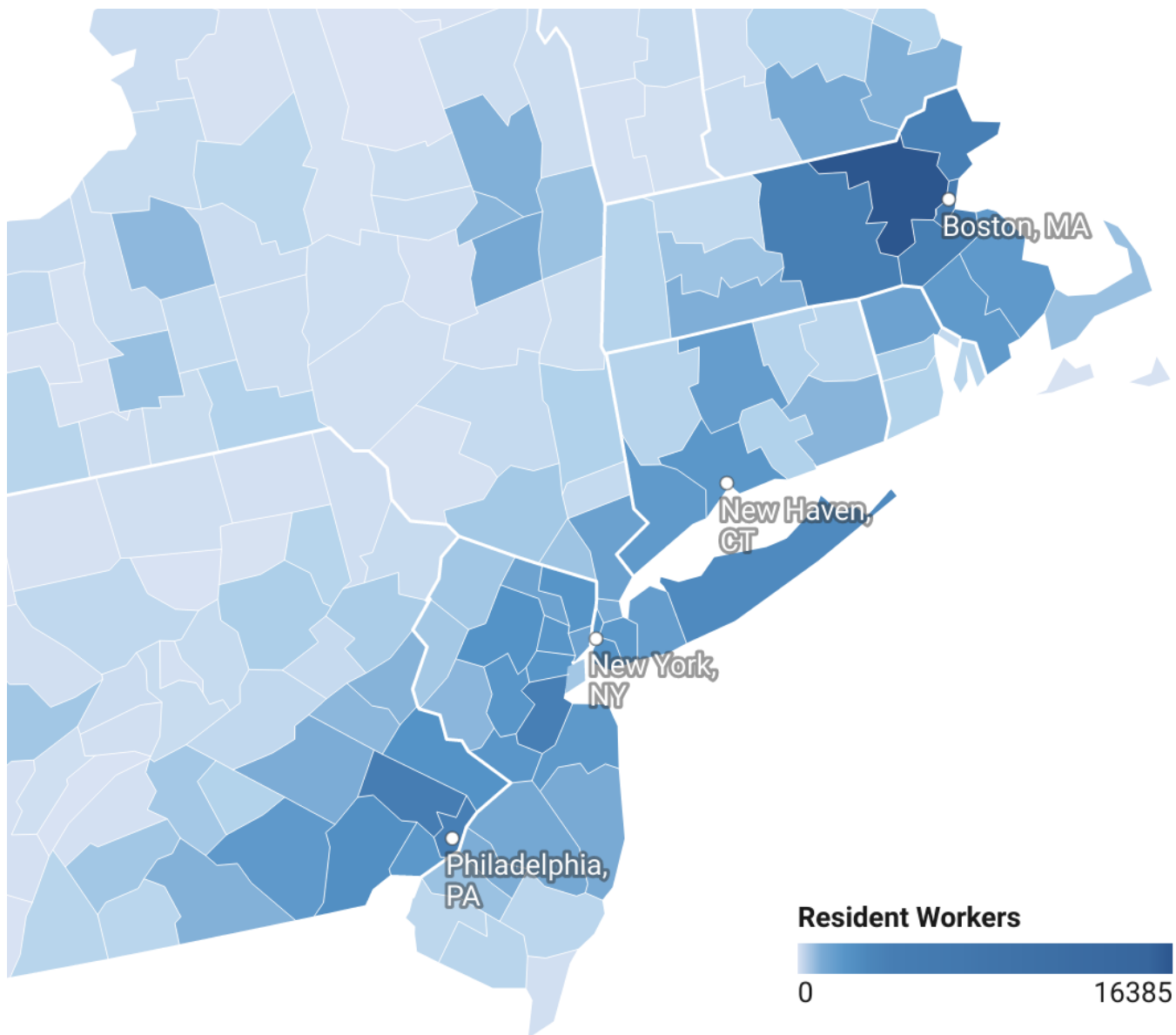
#4 in the nation for **bioscience patents**

#2 state for **academic bioscience R&D investment**

SOURCE: TECONOMY/BIO, 2020; VALUES ARE PER CAPITA

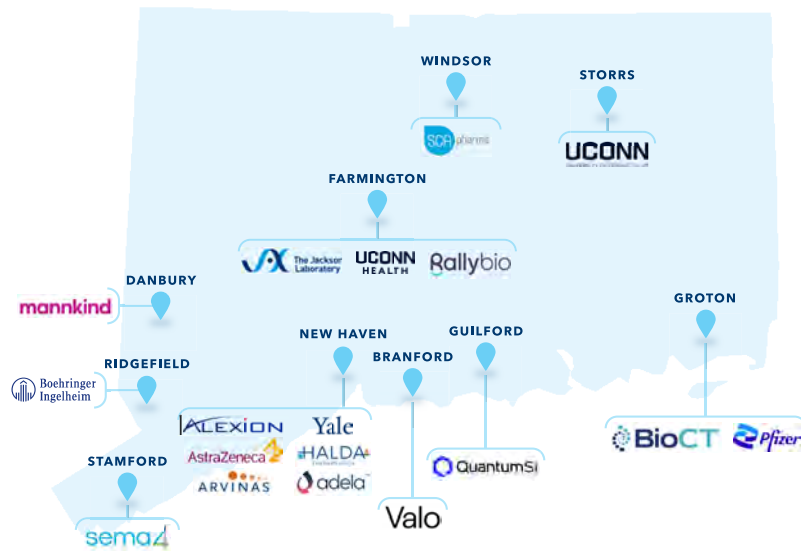


Life Sciences Workforce in the Northeast Corridor



Connecticut is part of a dynamic life sciences ecosystem that includes some of the top life sciences clusters in the country.

SOURCE: EMSI BURNING GLASS, 2020; RESIDENT WORKERS BASED ON CUSHMAN AND WAKEFIELD LIFE SCIENCES OCCUPATIONS DEFINITION, Q1 2022 LIFE SCIENCES UPDATE. JONES LANG LASALLE, 2021.



A Sampling of Connecticut's Life Sciences Ecosystem

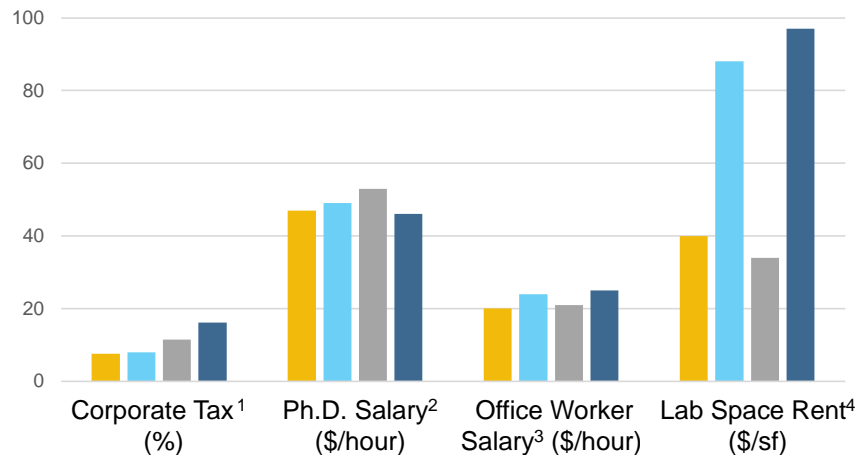




The Connecticut Cost Advantage

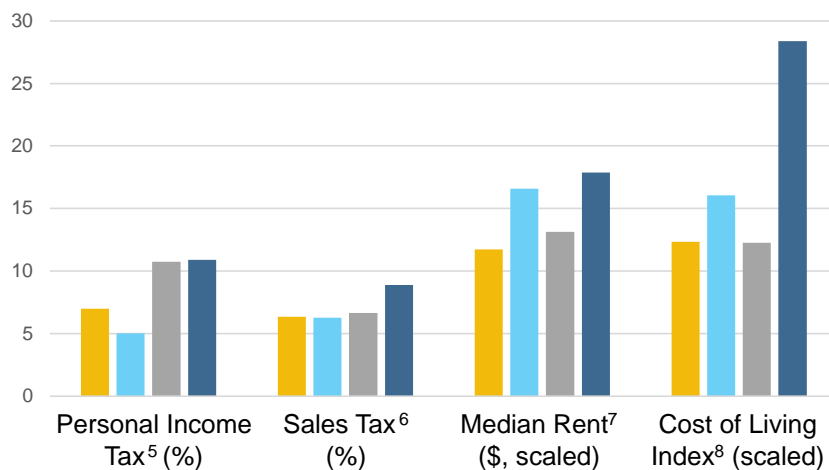
■ New Haven, CT
 ■ Boston, MA
 ■ Princeton, NJ
 ■ New York, NY

Business Expenses



Significantly lower cost of doing business

Personal Expenses



Lower living expenses and a great quality of life

¹Tax Foundation, 2022; New York State Department of Taxation and Finance, 2022. Top marginal tax rate. New York includes state tax and NYC business corporation tax. CT tax is the greater of 7.5% of taxable net income or 0.21% of capital base. Capital base tax drops to 0.11% in 2023 and will be eliminated in 2024. ²Emsi Burning Glass, 2020. Average Hourly Earnings by county for Biological Scientists. ³Emsi Burning Glass, 2020. Average Hourly Earnings by county for Office and Administrative Support Occupations. ⁴Cushman & Wakefield, Q1 2022; Colliers, Q4 2021. Lab space rental costs in ft². New Jersey is statewide average. ⁵Tax Foundation, 2022. Top marginal individual income tax rate. ⁶Tax Foundation, 2022; New York State Dept of Taxation and Finance, 2022. ⁷U.S. Census Bureau, ACS 5-year, 2020. Median monthly rent by county, divided by 100 for scaling purposes. ⁸C2ER, 2021. County-level cost of living index, divided by 10 for scaling purposes.



TALENT

LIFE SCIENCES SECTOR SNAPSHOT

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Connecticut has a Strong Life Sciences Talent Ecosystem

Connecticut has quality talent and is more affordable than many large life sciences hubs.



#3 most educated workforce in the U.S.
(WALLETHUB, 2021)

Talent in Connecticut



46% more engineers than the national average

20% GROWTH
FROM 2014-2020



1.3X national average for data and math scientists

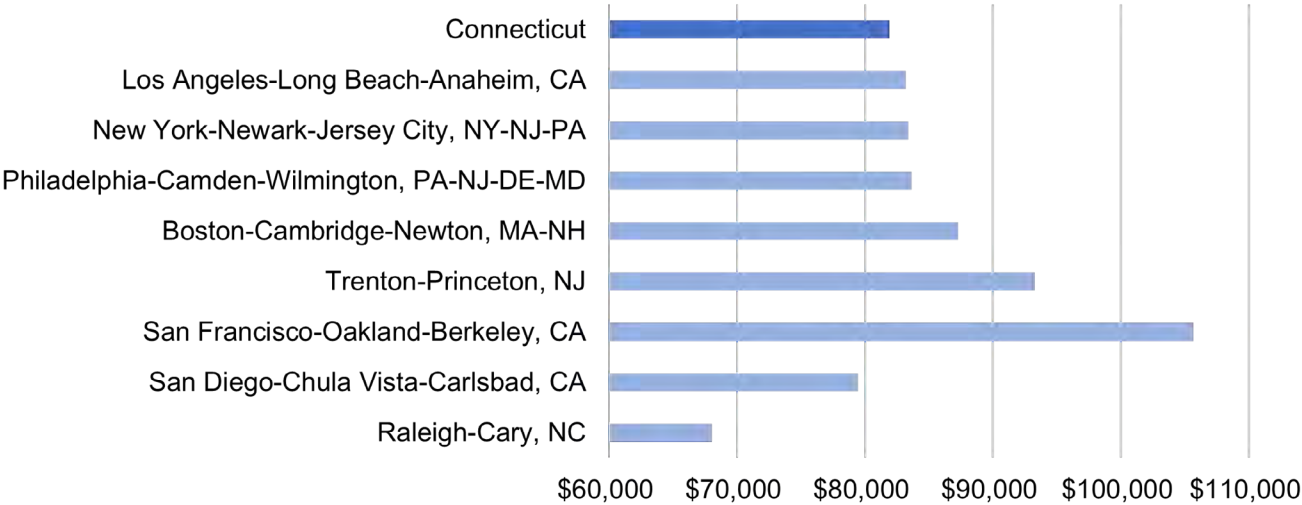
171% GROWTH
FROM 2014-2019



Nearly 17,000 software developers

22% GROWTH
FROM 2014-2019

Life Sciences Talent Median Annual Earnings

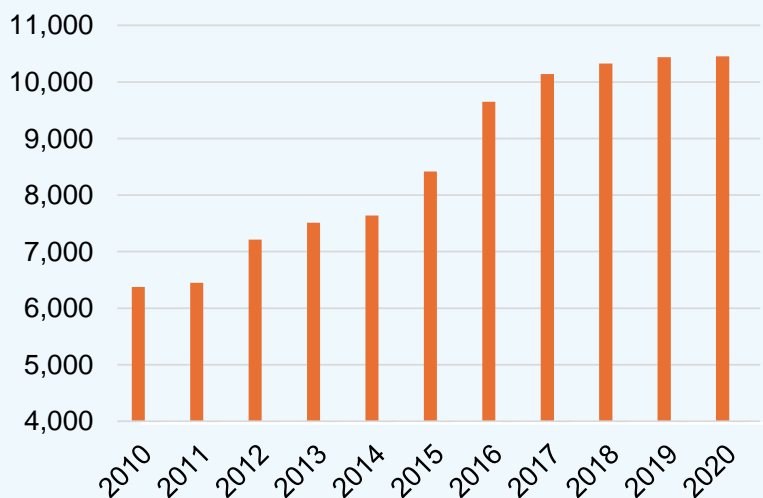


SOURCE: EMSI BURNING GLASS, 2020; CUSHMAN AND WAKEFIELD LIFE SCIENCES OCCUPATIONS DEFINITION; ADVANCECT CALCULATIONS



Connecticut has a Robust Life Sciences Educational Pipeline

Connecticut STEM Graduates



SOURCE: EMSI BURNING GLASS, 2010-2020; U.S. DEPARTMENT OF HOMELAND SECURITY DEFINITION



20% of all Connecticut grads are in STEM fields

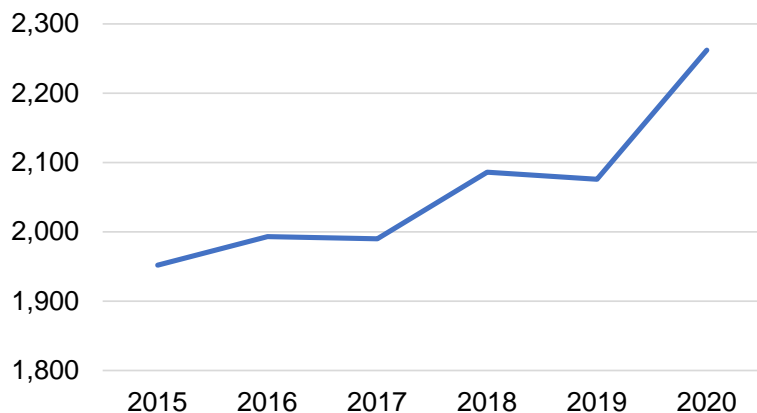
IPEDS, 2020; U.S. DHS DEFINITION; ADVANCECT CALCULATIONS



STEM completions in Connecticut up 64% since 2010

IPEDS, 2020; U.S. DHS DEFINITION; ADVANCECT CALCULATIONS

Connecticut Biological & Biomedical Science Graduates



SOURCE: EMSI BURNING GLASS, 2015-2020



#3 state for biological/ biomedical science advanced degrees awarded per capita

EMSI BURNING GLASS, 2020; ADVANCECT CALCULATIONS

Notes: Advanced degrees defined as master and doctorate degrees; states with fewer than 200 advanced degrees excluded from the rankings analysis.



The Right Assets to Fuel Continued Growth of the Life Sciences Sector

Connecticut provides specialized assets that the life sciences ecosystem requires – from laboratory space to research partnerships, generalized production workers to top engineers, and healthcare experts to leading scientists.

Research Universities

Yale

3.2K+ faculty in medicine;
2,630 research awards

UConn
UNIVERSITY OF CONNECTICUT

4.7K faculty at
UConn Health

Advanced Manufacturing Sector



CT is #2 in the U.S. for
concentration of engineers

EMSI BURNING GLASS, 2020;
ADVANCECT CALCULATIONS

74K

life sciences relevant
production jobs

EMSI BURNING GLASS, 2020

Healthcare Services

**Yale
NewHaven
Health**

37,000+
employees/staff

**Hartford
HealthCare**
Hartford Hospital

33,000+
employees/staff

212K health services jobs statewide
17% ABOVE THE NATIONAL CONCENTRATION

EMSI BURNING GLASS, 2020;
ADVANCECT CALCULATIONS

Technology Sector



CT has nearly **60K tech jobs**

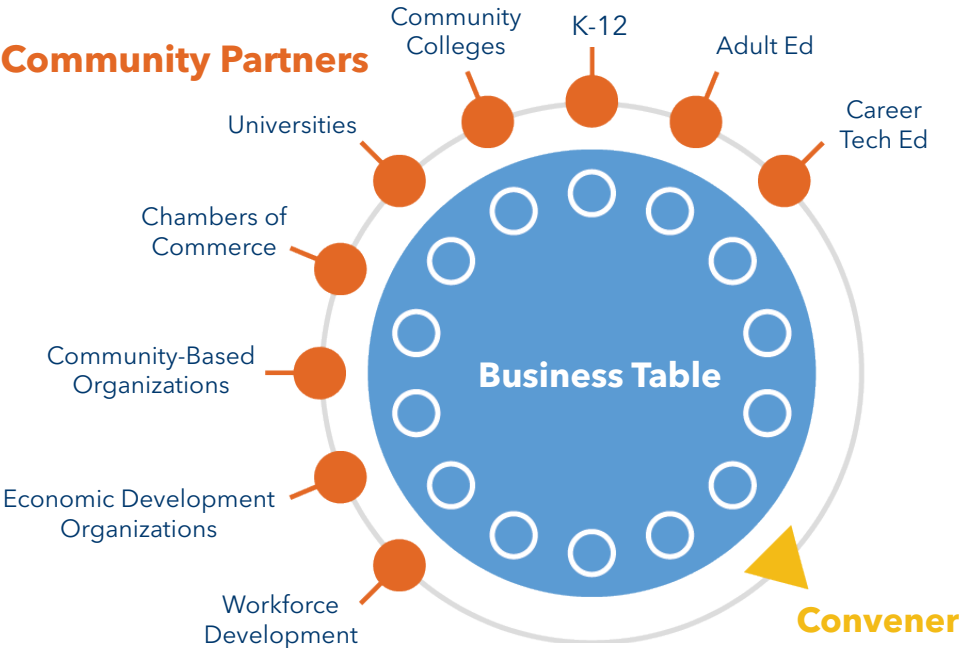


CT's tech labor **costs lower
than other major hubs** like
Boston, NYC, Seattle, and
the Bay Area

EMSI BURNING GLASS, 2020; COMPTIA
DEFINITION; ADVANCECT CALCULATIONS



Growing the Talent Pipeline




Bioscience Collaborative

Partnerships Driving Growth

Public and private organizations working to develop a more inclusive and diverse talent pipeline in the sciences.



Example Partnership	Partners	Purpose
	 	<p>Grow the bioscience sector through bioscience related academic pathways and workforce development</p> <p>Provide students with access to boot camps, internships, research experience</p>



REAL ESTATE

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Connecticut has an Active Life Sciences Real Estate Market

Innovative life sciences companies choose to locate in Connecticut.

Connecticut Real Estate Inventory On Par With Other Major Hubs



SOURCE: JONES LANG LASALLE IP, INC., 2021



101 College Street NEW HAVEN

525,000 square feet under construction

87% pre-leased as of May 2022

Target Fall 2023 opening

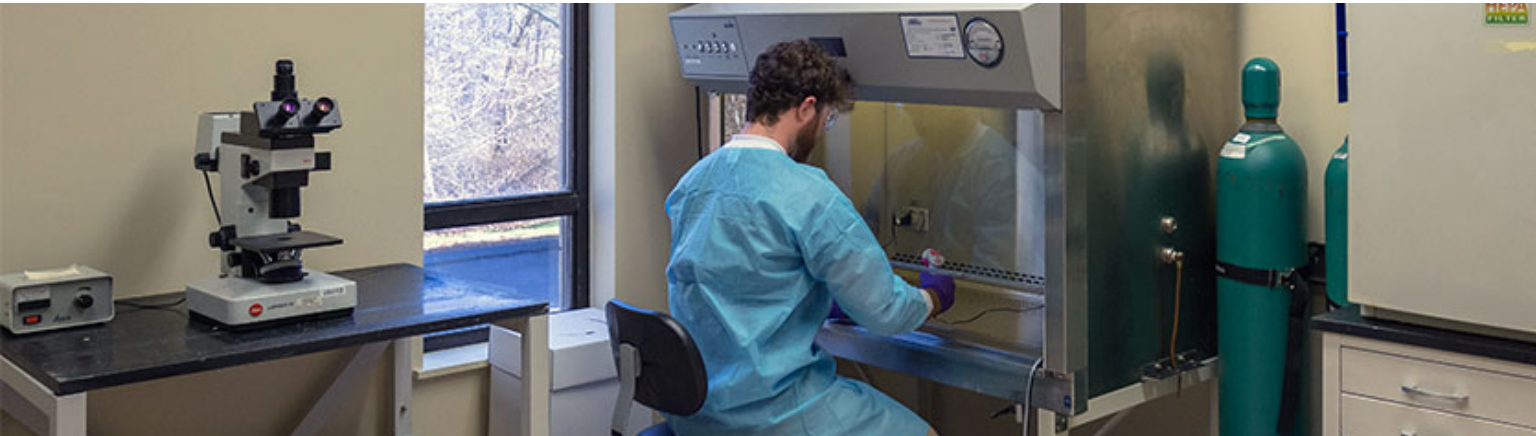
Recent Lease Transactions

Lease	City	Size (s.f.)
Quantum-Si	New Haven	65,000
Arvinas	New Haven	161,815
Adela	New Haven	11,810
Yale University	New Haven	115,000
Ancera	Branford	28,126
Aztek Bio	New Haven	6,130
Siduma Therapeutics	New Haven	12,600

SOURCE: COLLIERS, NEW HAVEN OFFICE, Q4 2021



Incubators To Fuel Growth



State-of-the-art
turnkey labs and
offices



Access to scientists
and entrepreneurial
community



Access to facilities,
library and
databases



Animal facilities and
clinical trials

Farmington | Groton | New Haven | Stamford





ACCESS TO CAPITAL

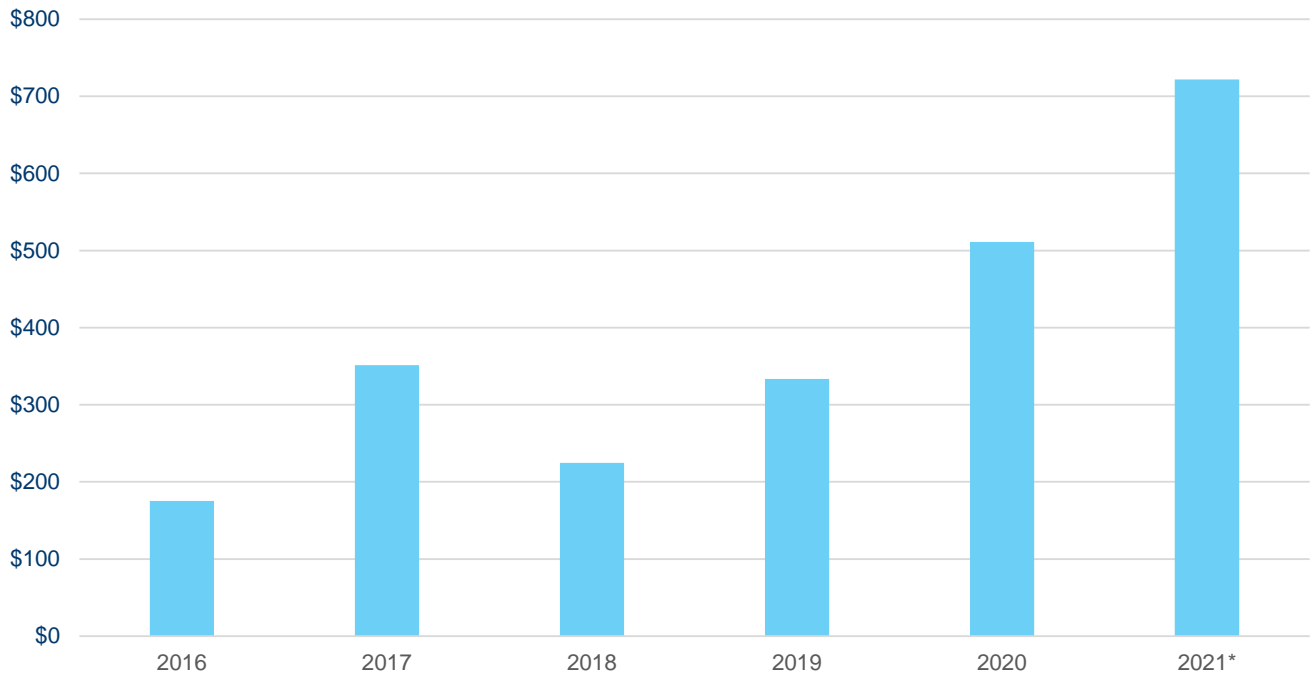
LIFE SCIENCES SECTOR SNAPSHOT

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Life Sciences Venture Capital in Connecticut is on the Rise

Pharmaceutical & Biotechnology Venture Capital Funding by Year (Millions USD)



Pharma and Biotech venture capital in Connecticut is **up 311% since 2016**
and has **more than doubled since 2019**.



#7 state for **total VC funding**



#4 state for **VC funding per capita**

SOURCE: PITCHBOOK, PHARMACEUTICAL & BIOTECHNOLOGY INDUSTRY GROUP, CT HQS; U.S. CENSUS BUREAU, 2020 DECENNIAL; ADVANCECT CALCULATIONS

*2021 IS PRELIMINARY DATA, VC PER STATE WITH AN IN-STATE HQ, 2020 POPULATION (MOST RECENT)



Life Sciences IPOs **\$1.8 Billion Raised**

IPOs worth more than \$826 million, follow-on offerings of \$446 million, and reverse mergers of \$574 million from Connecticut companies over the last five years.¹

\$125 Million

\$194 Million

\$60 Million

\$15 Million

\$125 Million

\$81 Million

\$162 Million

\$70 Million

SPAC IPOs from Relevant CT Companies²

\$500 Million

\$511 Million

\$414 Million

Life Sciences M&A **\$8 Billion in M&A Deals**

More than \$8 Billion in M&A for Connecticut Life Sciences companies over the last 5 years.¹

\$101 Million

\$50 Million

\$20 Million

\$20 Million

\$6,920 Million

\$71 Million

\$50 Million

\$744 Million

\$19 Million

\$14 Million

\$525 Million

\$41 Billion

\$94 Million

SOURCE: ¹PITCHBOOK, 2021; ADVANCECT CALCULATIONS. PHARMACEUTICAL & BIOTECHNOLOGY INDUSTRY GROUP, CT HQS. ²PITCHBOOK, 2021; YALE VENTURES, 2021. *2021 IS PRELIMINARY DATA, M&A DEAL SIZES PER COMPANY



Connecticut Universities Develop Valuable IP

Yale Life Sciences IP Driving Investment

Yale IP based life sciences companies raised \$831 million in 2021.

 spring health	 isoplexis	 Singleron 新格元生物科技	 HALDA THERAPEUTICS	 TruCode
\$190 Million	\$260 Million	\$100 Million	\$41 Million	\$75 Million

UConn Life Sciences IP and TIP Driving Investment

UConn startups and TIP companies raised \$144 million in 2021.

 Rallybio	 Vanessa Biotech GIVING HOPE WHERE NONE EXISTED	 ALLYX THERAPEUTICS	 TORIGEN Pharmaceuticals	 CytoVeris
\$81 Million	\$40 Million	\$7.6 Million	\$4.5 Million	\$3.8 Million

SOURCE: PITCHBOOK, 2021; YALE VENTURES, 2021; UNIVERSITY OF CONNECTICUT TECHNOLOGY INCUBATION PROGRAM, 2021; ADVANCECT CALCULATIONS. COMPANIES LISTED REPRESENT THE LARGEST TRANSACTIONS. *ALLYX IS AFFILIATED WITH BOTH YALE AND UCONN.

\$2.6B

raised for Yale and UConn life sciences affiliates since 2017

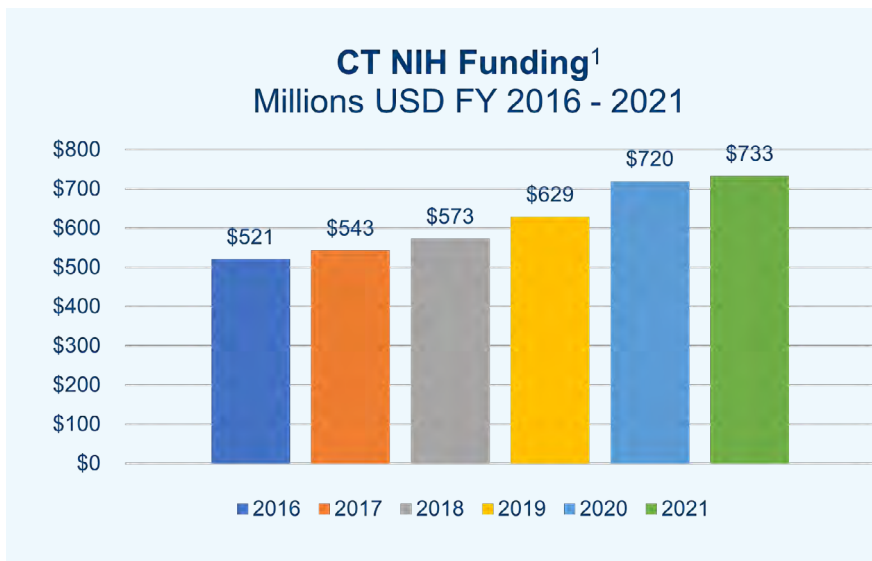
92

Yale and UConn affiliate companies funded since 2017

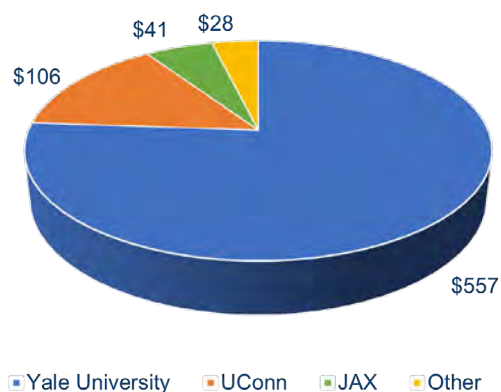




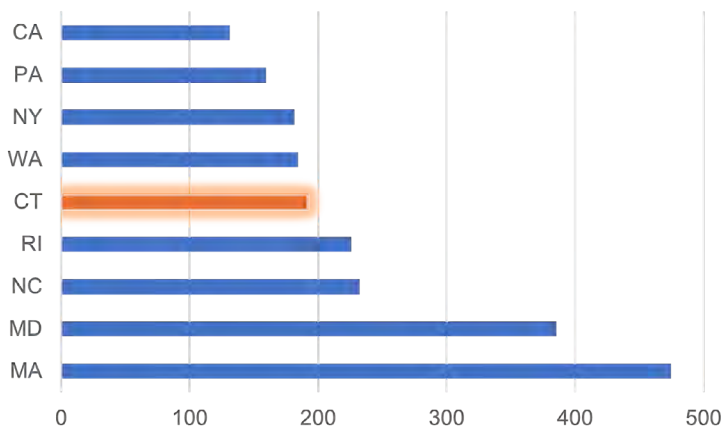
A Robust Culture of R&D Backed By Proven Growth



CT NIH Funding by Organization¹ Millions USD FY 2021



NIH Funding Per Capita by State²



#5 in U.S. for NIH funding per capita



#5 in U.S. for NIH funding per capita for COVID-19 research

SOURCE: ¹NIH REPORT, 2021; JAX-GENOMIC MEDICINE; ADVANCECT CALCULATIONS
²NIH REPORT, 2021; U.S. CENSUS BUREAU, 2020; ADVANCECT CALCULATIONS



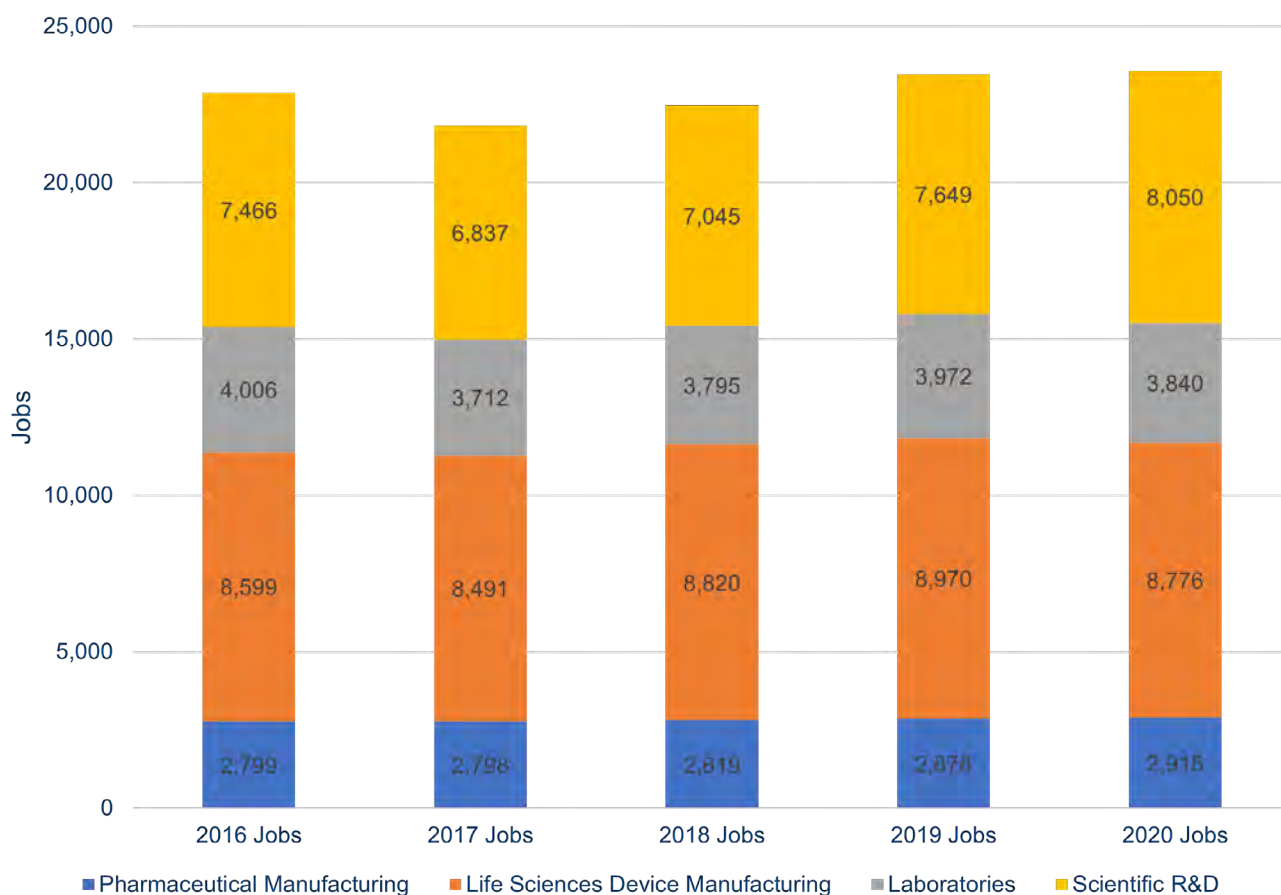
INDUSTRY STRENGTHS

LIFE SCIENCES SECTOR SNAPSHOT

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Jobs by Subsector



Life Sciences Device Manufacturing (37%) and Scientific R&D (34%) are the top life sciences employment sectors in the state

Top Job Contributing Industries in 2020:

R&D in Life Sciences (except Nano/Biotech)

Surgical and Medical Instrument Mfg.

R&D in Biotechnology

Medical Laboratories*

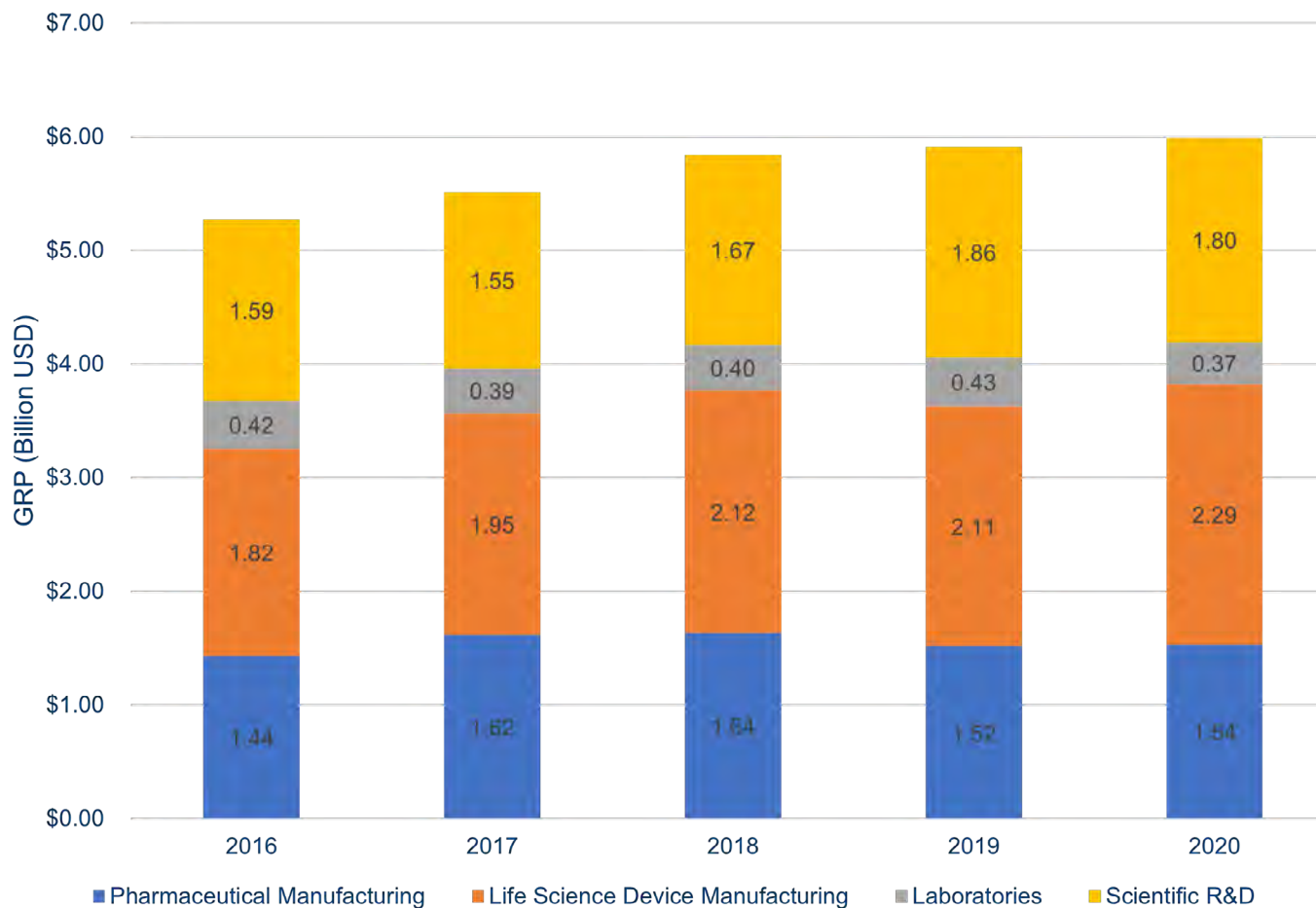
Testing Labs*

Medicinal and Botanical Mfg.

SOURCE: EMSI BURNING GLASS 2020, ADVANCECT CALCULATIONS; *PART OF ECOSYSTEM, NOT TRADED CLUSTER



GRP by Subsector



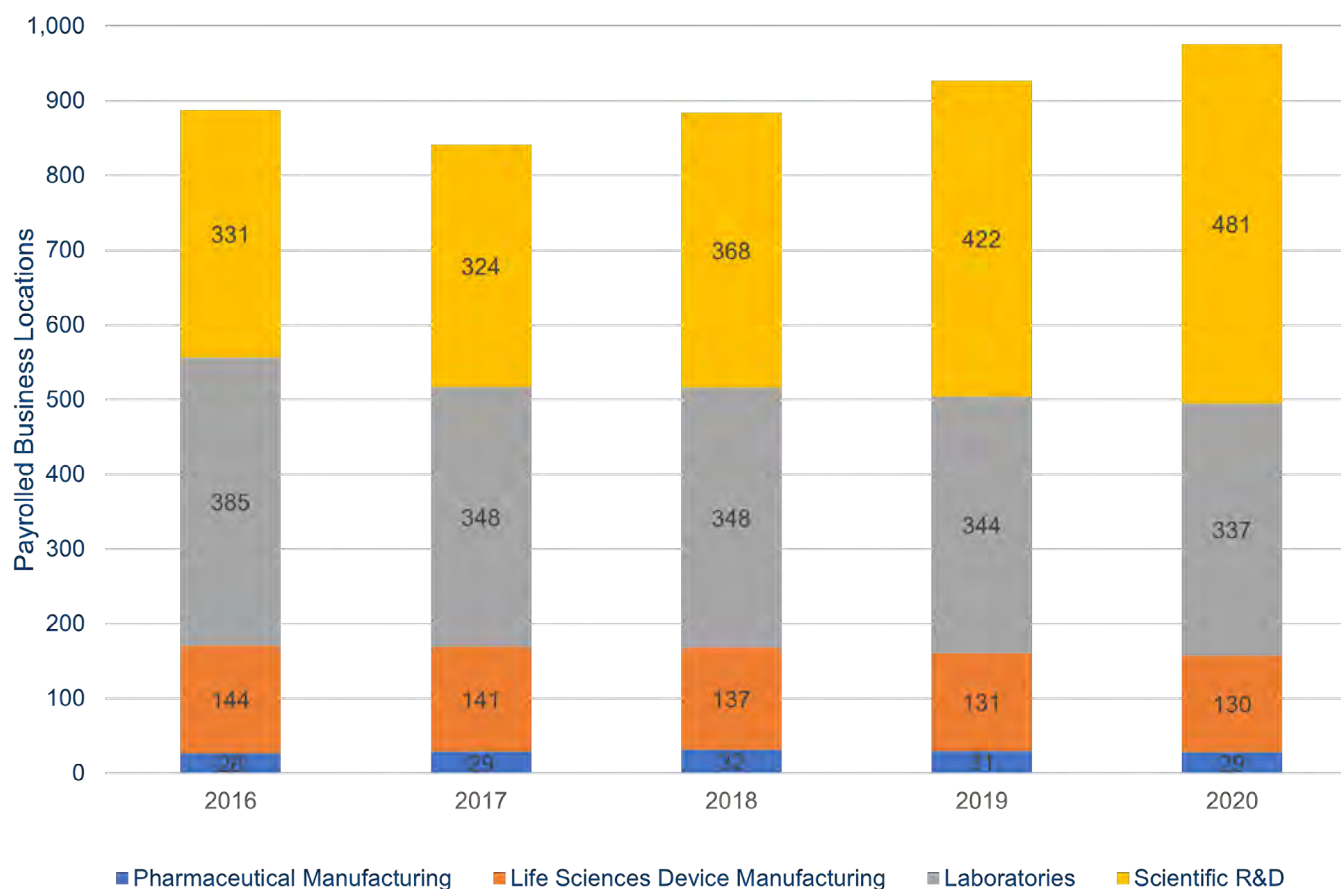
Scientific R&D subsector contributes 30% of GRP in the Life Sciences ecosystem

Subsector	Workforce Productivity, 2020*
Pharmaceutical Manufacturing	\$527,244
Life Sciences Device Manufacturing	\$260,622
Laboratories	\$96,072
Scientific R&D	\$223,508
Connecticut Life Sciences Ecosystem	\$254,150

SOURCE: EMSI BURNING GLASS 2020, ADVANCECT CALCULATIONS, *PRODUCTIVITY IS DEFINED AS GRP PER WORKER



Establishments by Subsector



Scientific R&D subsector makes up 49% of establishments in the Life Sciences ecosystem

Subsector	Avg Jobs per Location, 2020*
Pharmaceutical Manufacturing	101
Other Life Sciences Manufacturing	68
Medical Equipment and Supplies Manufacturing	11
Scientific R&D	17
Connecticut Life Sciences Ecosystem	24

SOURCE: EMSI BURNING GLASS 2020, ADVANCECT CALCULATIONS



Connecticut Life Sciences Subsectors

	Pharmaceutical Manufacturing	Life Sciences Equipment & Supplies Manufacturing	Laboratories	Scientific Research & Development	Ecosystem
2020 Jobs	2.9K	8.8K	3.8K	8.1K	23.6K
2016 - 2020 Jobs % Change	4%	2%	(4%)	8%	3%
2020 LQ*	0.83	1.85	0.88	1.00	1.14
2020 Locations	29	130	337	481	976
2020 GRP (Millions USD)	\$1,538	\$2,287	\$369	\$1,799	\$5,994

*Location quotient (LQ) is a way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region as compared to the nation.

SOURCE: EMSI BURNING GLASS 2020, ADVANCECT CALCULATIONS

Subsector Industries

Pharmaceutical Manufacturing

Medicinal and Botanical Mfg.
Pharmaceutical Preparation Mfg.

In-Vitro Diagnostic Substance Mfg.
Biological Product (Non-Diagnostic) Mfg.

Life Sciences Equipment & Supplies Manufacturing

Optical Instrument and Lens Mfg.
Electromedical/Therap. Apparatus Mfg.
Analytical Laboratory Instrument Mfg.

Irradiation Apparatus Mfg.
Surgical and Medical Instrument Mfg.
Surgical Appliance and Supplies Mfg.

Dental Equipment and Supplies Mfg.
Ophthalmic Mfg.

Laboratories

Testing Lab

Medical Laboratories

Scientific Research & Development

R&D in Nanotechnology
R&D in Biotech (except Nanotechnology)

R&D in Sciences (except Nano/Biotechnology)



Connecticut has Standout Life Sciences Metros

Greater Hartford

\$40M

research grant from the NSF awarded to UConn Health in 2021 – **the largest grant in UConn history**

UConn, 2021

38

UConn-affiliated **life sciences startups** within the last 10 years

UConn, 2022

\$112M

generated in **NIH funding** in FY2021

NIH REPORT, FY2021; JAX GENOMIC MEDICINE, FY2021



Greater New Haven

#3

among MSAs with at least 2K industry jobs for **surgical and medical instrument manufacturing job concentration**

EMSI BURNING GLASS, 2020; ADVANCECT CALCULATIONS

8X

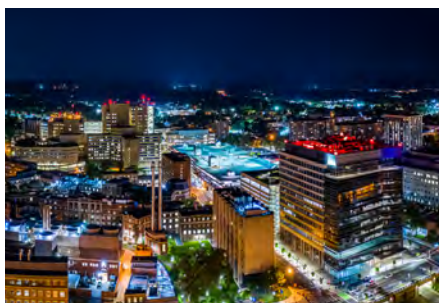
the national concentration of surgical and medical instrument manufacturing jobs

EMSI BURNING GLASS, 2020; ADVANCECT CALCULATIONS

1

of the **largest life sciences funding draws** in the U.S.

NIH & CBRE RESEARCH, 2020



Greater Stamford

#3

among MSAs with at least 500 industry jobs for **irradiation apparatus manufacturing job concentration** with **11X the national concentration**

EMSI BURNING GLASS, 2020; ADVANCECT CALCULATIONS

#1

among MSAs with 500+ industry jobs for **5-year job growth** in physical, engineering, and life sciences R&D (**347% increase** 2015-2020; from just over 800 jobs in 2015 to almost 3,700 in 2020)

EMSI BURNING GLASS, 2020; ADVANCECT CALCULATIONS



Greater New Haven refers to the New Haven-Milford, CT MSA. Greater Hartford includes the Hartford-East Hartford-Middletown, CT MSA. Greater Stamford includes the Bridgeport-Stamford-Norwalk, CT MSA.



Standout Life Sciences Industries



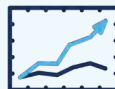
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Research and Development in Life Sciences

(Except Nano/Biotechnology)



Most jobs and highest GRP in ecosystem
(5,933, \$1.3B)



Double digit job (17%) and GRP (20%) **growth since 2016**



Specialized, but room for more: **1.18 LQ**



2

Surgical and Medical Instrument Manufacturing



2nd most jobs and 3rd highest GRP in ecosystem
(4,834, \$0.9B)



Job and GRP **growth since 2016**
(7%, 16%)



High specialization: **3.23 LQ**



3

Medicinal and Botanical Manufacturing



6th most jobs with double digit growth since 2016
(1,709, 11%)



2nd highest GRP at \$1.2B, almost 30% growth since 2016



High specialization: **4.47 LQ**



FOR MORE INFORMATION, CONTACT:

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