2021 LIFE SCIENCES REAL ESTATE DEVELOPMENT SYMPOSIUM
NYC Metro Economy: 10.2 Million Jobs, $2 Trillion GDP


1 Dot = 250 Jobs
- Local Services
- Industrial
- Education & Healthcare
- Office-based
#1 in Life Sciences Jobs

**Jobs**

- NYC Metro: 144K
- San Francisco: 122K
- Boston: 109K
- Los Angeles: 79K
- Washington, D.C.: 66K
- Chicago: 50K
- Philadelphia: 47K
- Raleigh-Durham: 33K

**Businesses**

- NYC Metro: 4.6K
- San Francisco: 3.2K
- Boston: 3.3K
- Los Angeles: 3.4K
- Washington, D.C.: 3.0K
- Chicago: 1.2K
- Philadelphia: 1.7K
- Raleigh-Durham: 1.2K

#1 in Life Science Talent

Workers in Life Sciences Occupations by U.S. Metro, 2020

Source: U.S. BLS Metropolitan Occupational Employment and Wage Estimates, May 2020
#1 in NIH Funding

Total FY2020 NIH Funding by Metro ($ Billions)

- Boston-Cambridge: $2.8B
- NY Metro: $3.56B
- NYC Metro: $3.56B
- Philadelphia: $1.2B
- Raleigh-Durham: $1.1B
- Maryland: $1.9B
- San Diego: $1.0B
- LA: $1.4B
- Bay Area: $1.5B
- Chicago: $0.9B
- Houston: $0.8B
- Seattle: $1.0B

Source: NIH, CBRE Research, Q4 2018
VC funding has tripled since 2016.

NYC Metro Healthcare/Biotech V.C. Funding by State, FY 2010 - 2020

NIH Funding in the NYC Metro
FY 2020

- < $1M
- $1M – $5M
- $5M – $10M
- $10M – $100M
- > $100M

THE STATE OF INNOVATION

November 2021
A GLOBAL LIFE SCIENCES HUB
Where companies grow and innovation thrives
Be among your peers growing here

TOP LIFE SCIENCES COMPANIES ALREADY CHOSE NEW JERSEY
Our success can be quantified

**#1** employed biochemists & biophysicists

**#2** biotech strength

**#2** state for cancer drugs in development

**#2** state for heart + stroke drugs in development

**#2** region for NIH funding

**#3** U.S. life sciences cluster

**13** of the top **20** pharma companies

**12** of the top **20** medical device companies

**12** of the top **22** R&D companies

**139** FDA-registered biopharma manufacturing facilities - #1 in the U.S.

**50%** of 2019 FDA approvals

**3,200+** life sciences establishments
The future of medicine is here

A ROBUST CELL & GENE THERAPY HUB

The future of medicine is here
A ROBUST CELL & GENE THERAPY HUB

Partnering with New Jersey Innovation Institute (NJII)

PREPARING THE WORKFORCE
1st in the U.S. to offer a Professional Science Masters (PSM) degree program and professional graduate certificate in cell and gene therapy

PIONEERING PATIENT-CENTRIC THERAPIES
BioCentriq
• 1st cell and gene therapy process development and clinical manufacturing facility located on a university campus in the U.S
• Sponsored precompetitive or fee-for-service projects
• Partnerships with NIBL, GSK, Merck
• $3.5M investment from Pall Corporation
• Augment in-house capacities or access facilities to move from pre-clinical to human trials
INCUBATORS & RESEARCH HUBS

THE HUB IN NEW BRUNSWICK
A 10-story, cutting-edge home base for research institutions, health care companies and technology firms.
Where academic researchers, corporate innovators and startups can collaborate

NJEDA’s NJ BIOSCIENCE CENTER
50 acres 202,343 sq. meters of incubator space, step-out labs, independent R&D facilities, build-to-suit sites
Park tenants include Allergan and Chromocell

ON3
Lab, research and office space on the reimagined Hoffman-LaRoche campus
Home to Hackensack Meridian School of Medicine and Quest Diagnostics

PRINCETON WEST INNOVATION CAMPUS
Over 30 buildings which include biological product development and clinical manufacturing (GMP and non GMP) facilities, R&D support facilities.
Home to PTC Therapeutics, Passage Bio and soon BeiGene

PRINCETON INNOVATION CENTER BIOLABS
Member-based coworking environment pairs a supportive and scalable shared office and lab space with strategic access to capital and industry partners.
Biolabs in Partnership with Princeton University
2021 LIFE SCIENCES
REAL ESTATE DEVELOPMENT SYMPOSIUM
total bioscience workers and 1,350+ companies in Connecticut (BioCT, 2020)

80% of total science & engineering R&D in Connecticut is academic bioscience (BioCT, 2020)

#4 in the US for Bioscience Venture Capital (BioCT.org)

#4 in the nation for bioscience patents per capita (U.S. Patent & Trademark Office, 2020)

#2 in the U.S. for academic bioscience R&D investments per capita (TEConomy/BIO, 2020)
CONNECTICUT’S BIOSCIENCE ECOSYSTEM
ROBUST R&D BACKED BY PROVEN GROWTH

NIH
National Institutes of Health

CT NIH Awards
$ Millions FY 2016 - 2020

CT NIH Awards by Org
$ Millions FY 2020

NIH Awards by State
Per Capita FY 2020

Source: NIH, 2016-2021; + AdvanceCT
Venture Capital Investment

**Total deals**

<table>
<thead>
<tr>
<th>Year</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021 YTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>23</td>
<td>29</td>
<td>29</td>
<td>30</td>
<td>52</td>
<td>37</td>
</tr>
</tbody>
</table>

**TOTAL VC CAPITAL INVESTED (MILLIONS)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021 YTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>$48</td>
<td>$119</td>
<td>$91</td>
<td>$138</td>
<td>$561</td>
<td>$824</td>
</tr>
</tbody>
</table>

**AVG DEAL SIZE (MILLIONS)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021 YTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>$2.1</td>
<td>$4.1</td>
<td>$3.1</td>
<td>$4.6</td>
<td>$10.8</td>
<td>$22.3</td>
</tr>
</tbody>
</table>

Source: PitchBook, October 30, 2021
GROWING ECOSYSTEM
2021 LIFE SCIENCES REAL ESTATE DEVELOPMENT SYMPOSIUM
Westchester County Life Science Landscape

- Abundance of academic institutions with relevant healthcare and life science degree programs
  - NYU-Stern, Pace University (College of Health Professions, Seidenberg School of Computer Science) SUNY Purchase (bio, chem, biochem), Sarah Lawrence College (MS in Human Genetics), and more
- Major hospital and healthcare systems
  - Memorial Sloan Kettering, Montefiore, NewYork-Presbyterian, Westchester Medical Center, Burke Rehabilitation Hospital, White Plains Hospital, and more
- Research institutes focusing on brain injury, metabolic disease, obesity, inflammation
  - Burke Neurological Research Institute, and others
- Clinical trials network with $5MM NYS grant
- Biosciences Accelerator program
- Life sciences Incubator – BioInc@ New York Medical College, the NYS Mid-Hudson region certified incubator, currently incubating 10 startups
- Skilled experts in allied fields
- Real estate developers focused on bolstering this sector
Asset Map

• 186 entities overall on the map
  • 19 Drug Development companies
  • 13 Medical Device companies
  • 10 Instrumentation and Equipment manufacturers
  • 5 CROs
  • 47 Academic and Research institutions
  • 13 Disease/Patient Foundations
  • 25 Hospitals
  • 18 startups completed WCBA
  • 10 startups currently inside BioInc
  • Plus many startups unaffiliated with either of those
Outlook

• Biosciences Task Force is working in key areas:

  • Workforce development initiatives – MOU with Manhattan College for science and engineering in WC
  • Incentives and Investment Capital
  • Supply Chain, Soft Landings program and other attraction/recruitment strategies
  • Continued support of the earliest stage companies through WCBA
  • Identifying or creating suitable graduation space for second stage companies
  • Real estate dedicated to the Life Sciences is on the drawing board
The Program

<table>
<thead>
<tr>
<th>Development Type</th>
<th>Square Footage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Office</td>
<td>400,000 sf</td>
</tr>
<tr>
<td>Bio-Tech/Research</td>
<td>2,144,000 sf</td>
</tr>
<tr>
<td>Children's Science and Education Center</td>
<td>142,000 sf</td>
</tr>
<tr>
<td>Neighborhood Shopping</td>
<td>214,000 sf</td>
</tr>
<tr>
<td>Hotel</td>
<td>100,000 sf</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,000,000 sf</strong></td>
</tr>
</tbody>
</table>
Regeneron

- Regeneron has committed to a $1.8B upgrade at Tarrytown campus
- Expands the company’s campus by roughly 900,000 square feet, the expansion will cover the design and build-out of up to eight buildings, three parking garages and a central utility plant
- Adding 1,000 new employees over 5 years
- The project will take place in two phases over the next six years, bringing on new preclinical manufacturing and process development suites, labs and offices
Life Sciences: Jersey City
95 Greene Street
Life Sciences: Jersey City
SciTech Scity
2021 LIFE SCIENCES
REAL ESTATE DEVELOPMENT SYMPOSIUM
Bridging the Valley of Death
Bridging the Valley of Death

- University
- Investors
- Industry

Discovery | Commercialization | Development

Resources Invested

Basic Research grants
I-Corps
Federal Small Biz grants
Bridging the Valley of Death

- Basic Research
  - Fed. Research grants

- Private

- Public

- Proof of Concept
  - Innovation Corps (I-Corps)

- Valley of Death

- Business Formation
  - Fed. small business grants
    - Accelerator/Incubator
    - Angel Investors
    - Venture Capital Investors

- Scale
Northeast I-Corps Hub
Evolution from an I-Corps Node to an I-Corps Hub

NYC Regional Innovation Node | I-Corps Hub: New York Region

2012

2022
Lead Organization: Rutgers University

Program Director: Fernando Muzzio

Funding Target: $120M

Sponsor: US EDA ($100M)

Target Starting Data: 10/15/2022

Coalition Members: Rutgers, NJIT, Princeton, MC NJEDA, NJCSIT, Middlesex County
BioNJ, ChooseNJ, HINJ, NJMEP
2. BBB Advanced Pharma
Manuf. Corridor

Current situation

• 529 proposals received for phase 1 ($500K planning grant)
• 60 will be funded
• 11 proposals in pharma space
  • Rutgers-led proposal focuses on drug substance, finished solid products, cell/gene therapeutics, viral vaccines at all scales
  • Univ. of Puerto Rico focuses on finished solid products at clinical trial scale
  • Univ. of Virginia Commonwealth focuses on drug substances
  • Univ. of Delaware focuses on Work Force development for biologics
  • Remaining ones are pure Bio
Goals

• Enable industry to implement advanced pharmaceutical manufacturing
  • Better quality, lower manufacturing cost, faster development

• Re-grow pharmaceutical manufacturing in the US
  • Overcome dependence on imports
  • Better prepare for next biomedical emergency

• Create high paying jobs, increase GDP, strengthen NJ economy
BBB Advanced Pharma Manuf. Corridor: Eight Target Projects

- Project 1: Workforce Development Platform
  - Classroom and laboratory activities, hands-on courses and workshops, internships, apprenticeships, design activities
  - Curricula designed in consultation with employers
  - Est. cost $5M (Lead: Middlesex College).

- Project 2: Business Model and Supply Chain Resilience Analysis Platform
  - Est. cost $5M (Lead – RU NB Business School).

- Project 3: Entrepreneurship Toolbox
  - Commercialization opportunities for new medicines, manufacturing equipment, and services.
  - Grants and subsidized access to technical services for small companies

- Project 4: Advanced Manufacturing Platform for API
  - Continuous facilities at g/h and Kg/h scales
  - Digital twin models (DARPA and FDA funded)
  - Est. cost $8M (Lead RU).

- Project 5: Advanced Manufacturing Platform for OSDs
  - Flexible platform for rapid design of products and their manufacturing process, rapid product change-over, and 100% quality assurance.
  - Est. cost $16M (Lead RU).

- Project 6: Advanced Manufacturing Platform for Biological Therapeutics
  - Small-scale cell culturing and purification systems
  - Rapid development of biological synthesis and purification processes.
  - Flexible equipment to support production at the commercial scale for viral vectors and viral vaccines.
  - Est. cost $16M (Lead NJIT).

- Project 7: The Digital Manufacturing Framework
  - Web-based methods for worker training, knowledge management and dissemination
  - Computer-based product and process design toolbox
  - Est. cost $8M (Lead RU).

- Project 8: Physical Infrastructure
  - Two main facilities:
    - (I) Innovation & Technology Hub in New Brunswick (Administration, classroom and laboratory training, modeling)
    - (II) Bioscience Center in North Brunswick. Advanced Manufacturing facilities for active substances, tablets and capsules, and biological therapeutics and hands-on worker training
  - Est cost $40M (Lead RU).
NEW JERSEY: THE STATE OF INNOVATION

Incentives to support Life Sciences real estate development

Brian Sabina
Chief Economic Growth Officer

www.NJEDA.com
Over 18 million sq. ft. of life sciences space inventory available today* + Exciting new transit-oriented developments in the NYC-Jersey City-Newark and New Brunswick regions

<table>
<thead>
<tr>
<th>Location</th>
<th>Space Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON3 campus Nutley</td>
<td><strong>1 M sq. ft.</strong> of life sciences space existing and under development on 116 acres.</td>
</tr>
<tr>
<td>Center of Excellence Bridgewater</td>
<td>~ <strong>850,000 sq. ft.</strong> lab/office on 100 acres</td>
</tr>
<tr>
<td>Princeton West R&amp;D Campus Hopewell</td>
<td>~ <strong>1.15 M sq. ft.</strong> life sciences space on 433 acres.</td>
</tr>
<tr>
<td>Cedarbrook Cranbury</td>
<td>~ <strong>300,000 sq. ft.</strong> lab/office</td>
</tr>
<tr>
<td>Princeton Corp Plaza – Deer Park South Brunswick</td>
<td>~ <strong>250,000 sq. ft.</strong> lab/office – <strong>new 60,000 sq. ft.</strong> lab/office building under construction</td>
</tr>
<tr>
<td>Forrestal Village Princeton</td>
<td><strong>300,000 sq. ft.</strong> of life sciences space</td>
</tr>
<tr>
<td>NJ Bioscience Center North Brunswick</td>
<td>~ <strong>300,000 sq. ft.</strong> lab/office</td>
</tr>
<tr>
<td>95 Greene Street Jersey City</td>
<td>A <strong>338,000 sq. ft.</strong> multi-tenant urban biopharma site adjacent to the Hudson River waterfront (in development)</td>
</tr>
<tr>
<td>215 College Road Paramus</td>
<td><strong>110,000 sq. ft.</strong> life sciences space, including labs as small as 2,000 sq. ft.</td>
</tr>
<tr>
<td>The COVE (in development) Jersey City</td>
<td><strong>1.5 M sq. ft.</strong> of life sciences/healthcare space</td>
</tr>
<tr>
<td>SciTech Scity (in development) Jersey City</td>
<td><strong>30-acre</strong> innovation campus at the Liberty Science Center</td>
</tr>
<tr>
<td>The Hub (in development) New Brunswick</td>
<td><strong>550,000 sq. ft.</strong> center of innovation, research, and medical education.</td>
</tr>
</tbody>
</table>

* Does not include space noted as “in development”
New Jersey has one of the most comprehensive development and growth program toolkits in the country

<table>
<thead>
<tr>
<th>EARLY STAGE</th>
<th>GROWTH STAGE</th>
<th>DEVELOPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SBIR/STTR &amp; SEED GRANTS</strong> - Provides grant funding to business to do early-stage R&amp;D and prototyping</td>
<td><strong>ANGEL INVESTOR TAX CREDIT (ATC)</strong> - expanded to $35M annually – investors receive 20% return</td>
<td><strong>ASPIRE</strong> - Real Estate gap financing up to $50M that can provide tax credits of up to 40-50% of capital costs</td>
</tr>
<tr>
<td><strong>NJ IGNITE</strong> - Provides financial assistance to start-ups to collaborative workspaces / incubators</td>
<td><strong>NET OPERATING LOSS (NOL)</strong> - Expanded to $75M annually; sell losses for non-dilutive cash</td>
<td><strong>TRANSFORMATIVE ASPIRE</strong> - Up to $250M per award for projects that invest $100 M+ in projects with at least 500,000+ sq. ft. of commercial space</td>
</tr>
<tr>
<td><strong>NJ ACCELERATE</strong> - Brings nationally recognized accelerators to New Jersey and matches investments made by the accelerators into NJ-based companies up to $250,000</td>
<td><strong>NJ INNOVATION EVERGREEN FUND</strong> - $500M venture investment fund for New Jersey companies</td>
<td><strong>STRATEGIC INNOVATION CENTER FUND</strong> - $55M fund for direct investment in innovation center JVs</td>
</tr>
</tbody>
</table>

For more information visit: [www.njeda.com](http://www.njeda.com)
• New York Metro Life Sciences and Healthcare funding surged to record high volumes in 2020
• YTD 2021 volumes poised to surpass that volume

![Life Science Investment by Year](image)

Source: Crunchbase, Pitchbook
Note: New York-Newark-Jersey City, NY-NJ-PA MSA

<table>
<thead>
<tr>
<th>Company</th>
<th>Round</th>
<th>Funding</th>
<th>Date</th>
<th>HQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noom</td>
<td>Series F</td>
<td>$540,000,000</td>
<td>5/25/2021</td>
<td>New York, NY</td>
</tr>
<tr>
<td>Ro</td>
<td>Series D</td>
<td>$500,000,000</td>
<td>3/23/2021</td>
<td>New York, NY</td>
</tr>
<tr>
<td>Cityblock Health</td>
<td>Series D</td>
<td>$400,000,000</td>
<td>9/3/2021</td>
<td>Brooklyn, NY</td>
</tr>
<tr>
<td>Capsule</td>
<td>Series D</td>
<td>$300,000,000</td>
<td>4/28/2021</td>
<td>New York, NY</td>
</tr>
<tr>
<td>Redesign Health</td>
<td>Venture - Series Unknown</td>
<td>$250,000,000</td>
<td>3/25/2021</td>
<td>New York, NY</td>
</tr>
<tr>
<td>OpenTrons</td>
<td>Series C</td>
<td>$200,000,000</td>
<td>9/23/2021</td>
<td>Brooklyn, NY</td>
</tr>
<tr>
<td>Cedar</td>
<td>Series D</td>
<td>$200,000,000</td>
<td>3/9/2021</td>
<td>New York, NY</td>
</tr>
<tr>
<td>Cityblock Health</td>
<td>Series C</td>
<td>$192,000,000</td>
<td>3/29/2021</td>
<td>Brooklyn, NY</td>
</tr>
<tr>
<td>Spring Health</td>
<td>Series C</td>
<td>$190,000,000</td>
<td>9/16/2021</td>
<td>New York, NY</td>
</tr>
<tr>
<td>AffaMed Therapeutics</td>
<td>Series B</td>
<td>$170,000,000</td>
<td>3/30/2021</td>
<td>New City, NY</td>
</tr>
</tbody>
</table>
• National Institutes of Health (NIH) funding has accelerated, increasing by 72.5% in the last five years in the New York Metro Area

New York Metro NIH Funding

Top 5 2021 NIH Funding

<table>
<thead>
<tr>
<th>Organization</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York University School of Medicine</td>
<td>$809,213,048</td>
</tr>
<tr>
<td>Columbia University Health Sciences</td>
<td>$576,670,685</td>
</tr>
<tr>
<td>Icahn School of Medicine at Mount Sinai</td>
<td>$400,055,195</td>
</tr>
<tr>
<td>Weill Medical College of Cornell University</td>
<td>$245,035,211</td>
</tr>
<tr>
<td>Sloan-Kettering Institute Cancer Research</td>
<td>$186,945,694</td>
</tr>
</tbody>
</table>

Source: NIH
Note: New York-Newark-Jersey City, NY-NJ-PA MSA
• New York Metro Area establishments and jobs continue to grow steadily

Source: Emsi
Note: New York-Newark-Jersey City, NY-NJ-PA MSA
J.P. Morgan is a Leader in Banking Digital Health Companies

Redesign Science
Paige
Trialspark
cedar
Datacubed Health
Butterfly Network
sema4
Click Therapeutics
Technology Type
Diagnostics, therapeutics, med tech, digital health, bioinformatics

ABCT Participants Tech Type

WCBA Participants Tech Type

ELabNYC Participants Tech Type
Investment; Job creation

$704M as of 2/21

Average Number of Team Members for ELabNYC 2013-19

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
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<th></th>
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<td></td>
<td>1.8</td>
<td>2.0</td>
<td>2.1</td>
<td>1.9</td>
<td>1.4</td>
<td>1.7</td>
<td>1.8</td>
<td>4.4</td>
</tr>
</tbody>
</table>

246 new jobs.

$38M

Average Number of Team members for ABCT 2018-21

<table>
<thead>
<tr>
<th>Year</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>Alums</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.2</td>
<td>4.3</td>
<td>3.5</td>
<td>5.1</td>
<td>6.3</td>
</tr>
</tbody>
</table>

60 new jobs

$2M

Average Number of Team members for WCBA 2020-21

<table>
<thead>
<tr>
<th>Year</th>
<th>2020</th>
<th>2021</th>
<th>Alums</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.2</td>
<td>4.4</td>
<td>4.3</td>
</tr>
</tbody>
</table>

6 new jobs
2021 LIFE SCIENCES
REAL ESTATE DEVELOPMENT SYMPOSIUM
Long Island City Life Science Market Overview
NYC Life Science Timeline
Burgeoning Life Science Demand in NYC

NOTABLE NEW YORK LIFE SCIENCE TENANTS

TREMENDOUS FOUNDATION FOR GROWTH

$2B 2019 NIH Awards (#2 in the nation)  
#1 in Biomedical Engineer, Biochemist, Biophysicist, and Chemist population in the USA—7,770 in the NY Metro area  
6 US News Top 100 Bio Science Programs in NYC, tops nation

LIFE SCIENCE RENTAL PREMIUM

<table>
<thead>
<tr>
<th></th>
<th>Manhattan</th>
<th>Long Island City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Life Science Rent Range</td>
<td>$95 – $120/SF NNN</td>
<td>$65 – $85/SF NNN</td>
</tr>
<tr>
<td>Average 1Q20 Office Rent Range</td>
<td>$82/SF GROSS</td>
<td>$46/SF GROSS</td>
</tr>
</tbody>
</table>

EXPLOSION IN VENTURE CAPITAL FUNDING

KEY GOVERNMENT INCENTIVES PROGRAMS

- NYC Early Stage Life Science Funding Initiative
- NYC Economic Development Corporation’s LifeSci.NYC plan
- NYC Industrial Development Agency
- NY State Life Science R&D Tax Credit Program
- NY State Excelsior Jobs Program Tax Credit

Source: PwC MoneyTree Report
# What Lab Tenants Want

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>PHYSICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COST</strong></td>
<td><strong>FLOOR LOADING</strong></td>
</tr>
<tr>
<td><strong>VIBRANT URBAN NEIGHBORHOOD</strong></td>
<td><strong>CEILING HEIGHT</strong></td>
</tr>
<tr>
<td><strong>ACCESS TO MASS TRANSIT</strong></td>
<td><strong>COLUMN SPACING</strong></td>
</tr>
<tr>
<td><strong>PROXIMITY TO INSTITUTIONAL RESOURCES</strong></td>
<td><strong>LAB / OFFICE RATIO</strong></td>
</tr>
<tr>
<td><strong>CLUSTER CONCEPT</strong></td>
<td><strong>LOADING DOCK</strong></td>
</tr>
<tr>
<td><strong>WORKFORCE HOUSING</strong></td>
<td><strong>EMPLOYEE SPACING</strong></td>
</tr>
<tr>
<td><strong>LAND USE</strong></td>
<td><strong>OUTSIDE AIR</strong></td>
</tr>
<tr>
<td><strong>MANUFACTURING ZONES</strong></td>
<td><strong>SUPPORT SPACES</strong></td>
</tr>
<tr>
<td><strong>LAB / OFFICE RATIO</strong></td>
<td><strong>PRE-BUILT SPACE</strong></td>
</tr>
<tr>
<td><strong>LAND USE</strong></td>
<td><strong>REDUNDANT POWER</strong></td>
</tr>
</tbody>
</table>

## Important to start-up companies operating with scarce resources

Young, well-educated work force; location is key to employee appeal and retention

Subways are more reliable; buses and ferries considered too

Hospitals and universities are anchors; many company founders have relationship with academic/medical institutions

Co-location with like-minded companies

Lab employees work long hours; younger staff prioritizes work / life balance

Manufacturing zones preferred; some commercial zones can also work
Innolabs | 45-18 Court Square West, Long Island City

**Developer:** King Street Properties / GFP Real Estate

**Delivery:** Available

**Building:** 267,000 RSF

**Availability:** 220,000 RSF

**Typical Floor Size:** 47,000 RSF

**Min. Available Footprint:** 12,000 RSF

**Economics:**
- $85 NNN
- $125-150 in TI
- 20-year real estate tax abatement

**Developer Life Science Experience:**
KSP one of the largest private lab owners in Cambridge/Boston with more than 3.5M SF in that market and approximately 5 million SF nationally; this is the company's first project in NYC.

**Neighborhood:**
Great location; across the street from Amazon HQ2 location, since abandoned after political fight. Abundant neighborhood amenities and housing options.

**Public Transportation:**
Enterance to Court Square station – G, E, M and 7 lines – fifty yards from the front door. Additionally, the N, R, and W trains are located within a five-minute walk of the building.

**Proximity to Academic/ Medical Institutions:**
Excellent; Rockefeller University, Weill Cornell Medicine, New York Presbyterian and Memorial Sloan Kettering right across the East River.

**Other Notes:**
Though KSP has number of large pharma tenants in its portfolio, the company focuses on young start-ups, with a stated desire to grow portfolio with its tenants' needs.
### Alexandria Science Center LIC

#### 30-02 48th Avenue, Long Island City

| Developer: | Alexandria Real Estate Equities |
| Delivery: | Available |
| Building: | 180,000 RSF |
| Availability: | 140,000 RSF |
| Typical Floor Size: | 60,000 RSF |
| Min. Available Footprint: | 7,500 RSF |

<table>
<thead>
<tr>
<th>Economics:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• $75 NNN</td>
</tr>
<tr>
<td>• $125-150 in TI</td>
</tr>
<tr>
<td>• Minimal free rent</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Developer Life Science Experience:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARE is one of the country's largest owners of lab space. In addition to this project, the company owns more than 1 million SF in NYC and continues to evaluate other locations throughout the city.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Neighborhood:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location is challenging. ARE has another site across the street which is slated for future development to create a campus environment. LaGuardia Community College is also nearby.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Public Transportation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-12 minute walk to three stations – Hunterpoint Avenue, Court Square and 33rd Street/Rawson Avenue – on the 7 line. In addition, the G, E and M lines are at Court Square.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Proximity to Academic/ Medical Institutions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the city’s major academic and medical institutions are located within a half hour of the building.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Notes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• ARE has a venture capital arm which invests in many of its tenants</td>
</tr>
<tr>
<td>• Opentrons, signed in late ’20 for short term deal, leaving for Innolabs</td>
</tr>
<tr>
<td>• Signed Mispro for small vivarium that will be open to building tenants</td>
</tr>
</tbody>
</table>
Paragon Oil Building  |  21-00 49th Avenue, Long Island City

<table>
<thead>
<tr>
<th>Developer:</th>
<th>The Related Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery:</td>
<td>4Q 2020</td>
</tr>
<tr>
<td>Building:</td>
<td>130,000 RSF</td>
</tr>
<tr>
<td>Availability:</td>
<td>125,000 RSF</td>
</tr>
<tr>
<td>Typical Floor Size:</td>
<td>18,000 RSF</td>
</tr>
<tr>
<td>Min. Available Footprint:</td>
<td>9,000 RSF</td>
</tr>
<tr>
<td>Economics:</td>
<td>• $65 NNN</td>
</tr>
<tr>
<td></td>
<td>• $175 in TI</td>
</tr>
<tr>
<td></td>
<td>• 4-5 months for a 7-year deal</td>
</tr>
<tr>
<td>Developer Life Science Experience:</td>
<td>Related is a significant owner of life science real estate in the Boston/Cambridge market.</td>
</tr>
<tr>
<td>Neighborhood:</td>
<td>Challenging, little retail in the immediate area and previous attempts at “placemaking” have failed, though Starbucks is located on the ground floor.</td>
</tr>
<tr>
<td>Public Transportation:</td>
<td>Building is atop the Hunterspoint Avenue station (7 train) and close to the G train at 21st Street station; Court Square station (G, E, M and 7 lines) is a 7-minute walk from the building.</td>
</tr>
<tr>
<td>Proximity to Academic/ Medical Institutions:</td>
<td>None of the city’s major academic and medical institutions are located within a half hour of the building.</td>
</tr>
<tr>
<td>Other Notes:</td>
<td>Former LIC industrial property that was retrofitted for creative office 3-4 years ago; building has been empty and ownership pivoted to life science, though triangular footprint has proven difficult to configure for biotech tenants</td>
</tr>
</tbody>
</table>
### Court Square Labs | 43-10 23rd Street, Long Island City

<table>
<thead>
<tr>
<th>Developer:</th>
<th>Longfellow Real Estate Partners/Columbia Property Trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery:</td>
<td>2Q 2023</td>
</tr>
<tr>
<td>Building:</td>
<td>205,000 RSF</td>
</tr>
<tr>
<td>Availability:</td>
<td>205,000 RSF</td>
</tr>
<tr>
<td>Typical Floor Size:</td>
<td>21,500 to 32,000 RSF</td>
</tr>
<tr>
<td>Min. Available Footprint:</td>
<td>TBD</td>
</tr>
<tr>
<td>Economics:</td>
<td>TBD</td>
</tr>
</tbody>
</table>

**Developer Life Science Experience:**
Longfellow is one of the largest private operators of life science real estate with approximately 12 million SF in Boston/Cambridge, Sand Diego, SF Bay Area and Raleigh/Durham. This is the company’s first project in NYC.

**Neighborhood:**
Very good location; less than a five minute walk to other key locations within the LIC cluster. An abundance of restaurants and other amenities nearby.

**Public Transportation:**
Eight different subway lines within a ten minute walk of the building, including the G, E, M and 7 trains at Court Square, the N, R and W trains and Queensboro Plaza and Queens Plaza, and the F train just north of the 59th Street Bridge.

**Proximity to Academic/ Medical Institutions:**
Excellent; Rockefeller University, Weill Cornell Medicine, New York Presbyterian and Memorial Sloan Kettering right across the East River.

**Other Notes:**
Developer open to vivarium, graduation space and other place-making uses that will help advance the LIC cluster. Potential to create sub-10K RSF suites onsite, which would be fairly unique within the NYC market.
23-02 49th Avenue, Long Island City

<table>
<thead>
<tr>
<th>Developer:</th>
<th>Innovo Property Group and Nan Fung Life Science Real Estate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery:</td>
<td>4Q ’22</td>
</tr>
<tr>
<td>Building:</td>
<td>600,000 RSF</td>
</tr>
<tr>
<td>Availability:</td>
<td>200,000 RSF</td>
</tr>
<tr>
<td>Typical Floor Size:</td>
<td>100,000 RSF</td>
</tr>
<tr>
<td>Min. Available Footprint:</td>
<td>25,000 RSF</td>
</tr>
<tr>
<td>Economics:</td>
<td>TBD; will be able to undercut Long Island City “Class A” labs space significantly</td>
</tr>
<tr>
<td>Developer Life Science Experience:</td>
<td>IPG is a first time life science developer but is assisted by NFLSRE, an owner of multiple properties in the Boston market and backed by Hong Kong conglomerate Nan Fung Group, which invests in life science firms.</td>
</tr>
<tr>
<td>Neighborhood:</td>
<td>Challenging; property is nearly adjacent to Paragon Oil Building. Little retail in the immediate area and previous attempts at “placemaking” have failed.</td>
</tr>
<tr>
<td>Public Transportation:</td>
<td>Hunterspoint Avenue station (7 train) and 21st Street station (G train) are close by. Court Square station (G, E, M and 7 lines) is a 7-minute walk from the building.</td>
</tr>
<tr>
<td>Proximity to Academic/ Medical Institutions:</td>
<td>None of the city’s major academic and medical institutions are located within a half hour of the building.</td>
</tr>
<tr>
<td>Other Notes:</td>
<td>Extremely large floor plates (100,000 RSF) which are not easily divisible. Landlord is planning four units, each approximately 25K RSF, but its unclear if the market exists for that produce.</td>
</tr>
</tbody>
</table>
24-02 Queens Plaza South, Long Island City

<table>
<thead>
<tr>
<th>Developer:</th>
<th>King Street Properties and Botanic Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery:</td>
<td>2Q '24</td>
</tr>
<tr>
<td>Building:</td>
<td>260,000 RSF</td>
</tr>
<tr>
<td>Availability:</td>
<td>260,000 RSF</td>
</tr>
<tr>
<td>Typical Floor Size:</td>
<td>30,000 RSF</td>
</tr>
<tr>
<td>Min. Available Footprint:</td>
<td>10,000 RSF</td>
</tr>
<tr>
<td>Economics:</td>
<td>TBD – despite renovation, building will be perceived by market as new construction and will be priced accordingly.</td>
</tr>
<tr>
<td>Developer Life Science Experience:</td>
<td>KSP is one of the largest private owners of lab space in the country with almost 5 million SF. This is Botanic's first life science project in NYC, though the company is active in the Philadelphia and Raleigh/Durham markets.</td>
</tr>
<tr>
<td>Neighborhood:</td>
<td>Great location; directly across the river from Upper East Side via the 59th Street bridge; housing, restaurants, etc. a short walk from the building.</td>
</tr>
<tr>
<td>Public Transportation:</td>
<td>Location across the street from Queensboro Plaza – N and W trains. Six other subway lines are within a 7-8 minute walk of the building.</td>
</tr>
<tr>
<td>Proximity to Academic/ Medical Institutions:</td>
<td>Excellent; Rockefeller University, Weill Cornell Medicine, New York Presbyterian, Hospital for Special Surgery and Memorial Sloan Kettering right across the East River. Mt. Sinai also within 25 minute catchment area.</td>
</tr>
<tr>
<td>Other Notes:</td>
<td>Part of a 1 million SF cluster in Long Island City; project will compete for real estate tax abatement via the City’s LifeSci NYC program.</td>
</tr>
</tbody>
</table>
Q&A
2021 LIFE SCIENCES
REAL ESTATE DEVELOPMENT SYMPOSIUM
# BioVenture eLab Service Offering

## Programming
- Accelerating BioVenture Innovation
- Biotech Plan Challenge
- Innovative Speaker Series
- Startup Symposium
- Newsletter
- SBIR/STTR grant tutorials
- Investor/industry meetings
- Ecosystem joint programming
- Networking opportunities & other events

## Resources
- Entrepreneurs-in-residence, industry mentors, student clubs
- Medical & business library / other resources
- Engineering / coding / prototyping workshops
- Sample investor decks, business models, value proposition
- Startup document templates
- NYC management talent
- Discounts on startup services
- Facility / meeting space

## Expertise
- Science & business expertise
- Investor pitch support
- Value proposition rubrics
- Equity allocation models
- Industry & investor contacts
- Licensing skills
- Professional services relationships for startups
- Strategic vendors (product development, regulatory, CROs)
- Focus groups
## Programming + Expertise Work Together: From EIR to CEO

<table>
<thead>
<tr>
<th>Company</th>
<th>Faculty founder</th>
<th>EIR</th>
<th>Talent pool: identifying CEO</th>
<th>SBIR</th>
<th>Programs</th>
<th>Other value adds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adiutrix Therapeutics</td>
<td>Randi Silver</td>
<td>Ron Lennox</td>
<td>Yes</td>
<td>No</td>
<td>Business Plan Challenge; InvestConnect; SBIR workshop</td>
<td>Investor intros</td>
</tr>
<tr>
<td>Chimerna Therapeutics</td>
<td>Sami Jaffrey</td>
<td>Loren Busby</td>
<td>n/a</td>
<td>Yes</td>
<td>CEO Peer; InvestConnect</td>
<td>Lab space; pitch coaching Capstone</td>
</tr>
<tr>
<td>STORK.ai</td>
<td>Olivier Elemento</td>
<td>Loren Busby</td>
<td>ongoing</td>
<td>No</td>
<td>ABI; Business Plan Challenge</td>
<td>Incorporation; CEO</td>
</tr>
<tr>
<td>CULNEXIN THERAPEUTICS</td>
<td>Pengbo Zhou</td>
<td>Suman Lal</td>
<td>ongoing</td>
<td>Yes</td>
<td>ABI; SBIR workshop</td>
<td>CEO search</td>
</tr>
<tr>
<td>Xenimmune</td>
<td>Jyoti Pathak</td>
<td>Michael Laskoff</td>
<td>No</td>
<td>Yes</td>
<td>Business Plan Challenge; I-Corp; SBIR workshop</td>
<td>Business model</td>
</tr>
<tr>
<td></td>
<td>Alison Hermann</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Neil Bander</td>
<td>Michael Aberman</td>
<td>ongoing</td>
<td>No</td>
<td>InvestConnect</td>
<td>Capstone project</td>
</tr>
</tbody>
</table>
2021 LIFE SCIENCES
REAL ESTATE DEVELOPMENT SYMPOSIUM
Elevator Lobby

Wood Slat Walls

- Full height display case
- Half-height lockers and display case above
- Solid wood base
- Vinyl signage
- Wood slats
- Painted metal reveal

Corridor Elevation - North

- Ceramic Tile
- Glass partition system
- Accent paint / signage

Corridor Elevation - South
Corridor - Entry Portals

LED Recessed Linear Fixture

Existing Terrazzo

VET

Glass Partitions
Typical Lab View

Wire Mesh 2'x2' Ceiling Panels

Rectangular Linear Pendant  Cellular Linear Pendant
Light Fixture Options

Mitchell Giurgola
2021 LIFE SCIENCES
REAL ESTATE DEVELOPMENT SYMPOSIUM
Cure Ecosystem and Physical Space
October 2021
Construction - Lobby
Welcome to Cure: Your second home designed to support life science innovation
Welcome to Cure:
Your second home designed to support life science innovation
Construction – Conference Center
State of the Art Conference and Collaboration Center: Where life science, health care, and business come together to succeed
State of the Art Conference and Collaboration Center:
Where life science, health care, and business come together to succeed
State of the Art Conference and Collaboration Center: Space to learn, connect, and grow
State of the Art Conference and Collaboration Center: Space to learn, connect, and grow
Construction – Roof Open Air Space
Construction – Roof Open Air Space
Rooftop Open Air Space with Convertible Layout:
Space designed to unlock access to the right the people that meet your expectations
Cure Executive Lounge: Space designed to unlock access to the right the people that meet your expectations
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Cure Executive Lounge: Space designed to unlock access to the right the people that meet your expectations
Cure Executive Lounge: Space designed to unlock access to the right the people that meet your expectations
Penthouse Conference Center: Facilities and infrastructure to support your needs
Penthouse Conference Center: Facilities and infrastructure to support your needs
Penthouse Conference Center: Facilities and infrastructure to support your needs
Penthouse Conference Center: Facilities and infrastructure to support your needs
The Nourishment Lounge: A fully stocked pantry to nourish your needs and take a break
The Nourishment Lounge: A fully stocked pantry to nourish your needs and take a break
The Nourishment Lounge: A fully stocked pantry to nourish your needs and take a break
Construction – Collaboration Desk and Office Space
Collaboration Desk Space: Tools to support your workforce needs so you can focus on the science
Collaboration Desk Space: Tools to support your workforce needs so you can focus on the science
Collaboration Desk Space: Tools to support your workforce needs so you can focus on the science
Collaboration Residency: Be as private or connected as you need to be while working alongside fellow innovators.
Construction – Collaboration Residency
Collaboration Residency: Be as private or connected as you need to be while working alongside fellow innovators
Creative Use of Space: Options to fit your needs if it’s a small gathering to a large complex
Creative Use of Space: Options to fit your needs if it’s a small gathering to a large complex
Construction – Chillers are Big to Support The Labs
Move-in Ready Lab Space: Helping You Take Your Scientific Discovery to Commercialization
Move-in Ready Lab Space: Helping You Take Your Scientific Discovery to Commercialization
Move-in Ready Lab Space: Helping You Take Your Scientific Discovery to Commercialization
Construction – NaCl
NaCL: Curated Menus to Nourish the Mind and Body
NaCL: Curated Menus to Nourish the Mind and Body
Construction – Gym
NaCl + H$_2$O: Sweat It Out with State-of-the-Art Technology
NaCL + H$_2$O: Sweat it out with State-of-the-Art Technology
NaCl + H$_2$O: Sweat it out with State-of-the-Art Technology
NaCl + H₂O: Sweat it out with State-of-the-Art Technology
biolabs @ NYU LANGONE
ACCELERATING INNOVATION & ADVANCING LIFE

180 VARICK ST, 6TH FLOOR, NY, NY
Biotech Incubation in the Valley of Death

Reducing capital requirement
Resource rich community that allows for innovators to focus on development and getting to milestones rather than on capital and time intensive operations.

Creating networks & partnerships
Collaborative spaces and events to foster community build, networking and collaborations.

Improving efficiency to PoC
Benches, labs and equipment that allow for Cell Biology, Molecular Biology, Biochemistry workflows all in one location. Training and Technical Troubleshooting.
50,000 sqft
180 Varick Street
Hudson Square

→ Storied Location

Nestled in the tradition of advancing life in NY, fringe culture and the creation of new.

15 min walk to Greenwich Village, Soho, West Village, Financial Center

Steps from E and 1 trains

Emerging Tech & Life Science Hub

NYU (Stern and Frontier Labs)
Genome Center
Jlabs
Google

NYU Langone Health
biolabs
NYC / EDC

STARTUP NY
TAX FREE ZONE

Fully built out space
Open benches
Private labs 150-1200 sqft
Desks & offices

biolabs @ NYU LANGONE
LARGE & UNIQUELY DIVERSE COLLECTION OF COMPANIES.
ADDRESSING A VARIETY OF SEGMENTS

31 COMPANIES
ADVANCING LIFE

140 MEMBER COMMUNITY

84 BENCH SCIENTISTS

50% SMALL MOLECULES
21% GENE THERAPY
14% IMMUNO THERAPY
14% OTHER

biolabs @ NYU LANGONE
RECENT GRADUATES HAVE SCALED FAST - IN LESS THAN 2 YEARS
...EVEN DURING THE PANDEMIC

2 MEMBERS AT START

20-40 MEMBERS AT GRADUATION

BLACK DIAMOND
IMMUNAI
C16
MORE THAN JUST SPACE
Focused goal of improving science and efficiencies getting to milestones FAST

ACCELERATING INNOVATION & ADVANCING LIFE
**Total Area:**

~322,000 SF

**Lab Area:**

~175,000 SF

**Floorplates:**

~32,000 SF

**Amenities:**

Ground Floor Amenity Space, Hudson River Views, Adjacent to DeWitt Clinton Park
Total Area: 
~400,000 SF

Lab Area: 
~400,000 SF

Floorplates: 
~54,000 SF

Delivery Date: 
Q3 2023

Amenities: 
Rooftop, Private Loading Dock, Conference Center, Bike Room, “Helix” Common Area
2021 LIFE SCIENCES
REAL ESTATE DEVELOPMENT SYMPOSIUM
Building History
Building Superstructure
Building Section

Floors 6, 7 and 8
- 159,000 Rentable Square Feet

Labs:
- Total Occupants: 254 people (wet and dry lab, offices)
- 30 Primary Investigators
- 169 lab benches
- 4,000 small animal cage Vivarium

Clinical:
- Breast Center
- Spine Center
- Imaging Center

Surgery Center:
- Four Operating Rooms
Open Wet Bench Research Labs
Open Wet Bench Research Labs

Reception

Wet Benches

Marker Board Collaboration Area

Write-up Desks
Mount Sinai Entry
The Columbia Innovation Ecosystem
Columbia’s 3 Manhattan Campuses...
... Sit Along A World-Class “Research Corridor” in West Harlem & Washington Heights...

- CUNY’s Advanced Science Research Center
- CUNY’s City College campus
- New York Structural Biology Center
- Columbia’s new Manhattanville Campus
- Columbia Morningside Campus
- Columbia Irving Medical Center; Columbia Presbyterian Hospital
- Alexandria Launch Labs @ Columbia Audubon
- Harlem Biospace
- West Harlem “Factory District”
... On an Island Overflowing with World-Class and Highly Collaborative Innovation Generators...
... in a Region Filled With Many Other World-Class Research Institutions (With Whom We Frequently Collaborate)
Snapshot: Columbia’s Manhattanville Campus

- 17 acres
- 1.1 million GSF currently developed, 6.8 million GSF at completion
- ~6000 daily interactions by Winter 2022
Snapshot: Harlem Biospace

- Life-science incubator located <10-min walk from Columbia and CUNY
- ~2,500 rsf of desk and wet-lab space with access to shared equipment
- Launched in 2013 with NYEDC, hosted over 70 life-science companies to date
- Low-cost desk and wet-lab space for up to 23 companies, $1,095/scientist/month
- Close association with Hypothekids (Hk), a non-profit enterprise which supports underserved high-achieving students with tech and life sciences education
- Current cohort: 17 diverse biotech companies
Snapshot: Alexandria LaunchLabs @ Columbia

- 14KSF
- Opened 2021
- 8 startups
- 35 employees
- Strong pipeline
2021 LIFESCIENCES

REAL ESTATE DEVELOPMENT SYMPOSIUM
PROJECT OVERVIEW

SIZE: 350,000 SF

FLOOR PLATES: 15,000-36,000 SF

SPECIAL FEATURES:

- Class A, new construction
- Nearly 20,000 square feet of outdoor space
- LEED-certified
- MEP Systems designed by BR+A Engineers
- 14' slab-to-slab heights
- Base design includes above standard power, ventilation (including strobic fans), acid waste and vent riser system, and designated locations for tenant emergency generators, all to accommodate life science users.

TAYSTEE LAB BUILDING
CONVENIENT TRANSPORTATION

1 A C B D

A TRAIN
1 stop from Columbus Circle
2 stops from Port Authority
3 stops from Penn Station

D TRAIN
1 stop from Columbus Circle
2 stops from 53rd/7th Avenue
3 stops from Bryant Park

DRIVING TIME
25 minutes from New Jersey
30 minutes from Westchester
30 minutes from Long Island City
40 minutes from Brooklyn
2021 LIFE SCIENCES
REAL ESTATE DEVELOPMENT SYMPOSIUM
To improve human, societal, and environmental well-being through excellence in interdisciplinary scientific discovery and education
ADVANCED SCIENCE RESEARCH CENTER
THE GRADUATE CENTER
CITY UNIVERSITY OF NEW YORK

5 RESEARCH INITIATIVES
18 FACULTY LABORATORIES
16 CORE FACILITIES
>260 RESEARCHERS & STAFF

10^{-9} m 10^{-6} m 10^{-3} m 10^0 m 10^3 m 10^6 m
Bio-Med Sensors Market
$27.06 billion by 2022

Environmental Sensors Market
$2.19 billion by 2023

Start-Up Companies
Industry Partnerships
Student Internships
Educational Courses
Commercially Driven
Core Facilities

Nanofabrication
NMR
MRI
Photonics/Radio Wave
Isotopic Analysis
Surface Science
Mass Spectrometry
Live Cell Imaging
Crystallization
Environmental Sensors
Electron Microscopy
Comparative Medicine
Epigenetics
Rodent Behavior
MALDI-TOF MS Imaging
STEM Education

A World-Class Interdisciplinary Research Center

Industry Partners

CUNY Schools & Programs

Talented, diverse students

STEM MS/PhD Programs

Academic Partners

Grants & Funding

Place students in academia & the STEM workforce
Building a STEM Workforce

- Thousands of students have participated in person and virtually
- ~80% of participants are from underrepresented groups
- Over 100 teachers engaged in trainings & workshops
- Over 50 CUNY faculty volunteers and trained in STEM education
- Arduino Based, Wifi Enabled Sensors Assembled and deployed across the city
- DIY Research Curriculum co-created with local environmental youth groups
- Undergraduates trained as high school mentors and community researchers
- Open-source code, assembly guides and curriculums available on github
Biotech Grows in Brooklyn

Eva Cramer, PhD, President
Downstate Biotechnology Incubator, Tech @ 710, and BioBAT
Biotech Grows in Brooklyn

**Downstate Biotech Incubator**
(Early-Stage Biotech/Tech Companies)
- 50,000 sf
  - Lab & Office Space
  - Core Facility & Conference Space
- Nursery Program For Smaller Companies

**Tech @ 710**
(Specialized Chemistry Space and Offices)
- 13,000 sf
  - Lab & Office Space
  - Core Facility & Conference Space
- 26 Fume Hoods

**BioBAT at the Brooklyn Army Terminal**
(Biotech/Tech Research & Manufacturing Companies)
- $50M LifeSci NYC Investment
  - Research & Manufacturing Space
- ~ 200,000 sf
- Partnership: SUNY Downstate & NYCEDC

Access to University Resources
- Scientists / Clinicians / Students
- Medical / Scientific Library
- Vivarium / Research Facilities / Clinical Trials
- Entrepreneurship Programs
- Easy Access to NYC Research Institutions
Biotech Grows in Brooklyn

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMPANY SUCCESS</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Companies</strong></td>
<td>35</td>
</tr>
<tr>
<td><strong>Jobs</strong></td>
<td>343</td>
</tr>
<tr>
<td><strong>Increased Revenues</strong></td>
<td>$ 64,206,863</td>
</tr>
<tr>
<td><strong>Fed/Non-Gov’t Funds</strong></td>
<td>$195,094,796</td>
</tr>
<tr>
<td><strong>Patents (received &amp; filed)</strong></td>
<td>40</td>
</tr>
</tbody>
</table>

1/4/20 – 3/31/21
2021 LIFE SCIENCES REAL ESTATE DEVELOPMENT SYMPOSIUM
Long Island Biotechnology

William Hanes, JD PhD
Center for Biotechnology
Center for Biotechnology

4 Research Centers
- Feinstein Institutes for Medical Research
- Stony Brook University
- Cold Spring Harbor Labs
- Brookhaven National Labs

2 Incubators
- Broad Hollow Bioscience Park
- Long Island High Technology Incubator
• Guidance and programs to early-stage tech and companies
• Nondilutive Funding
• Educational Programming
• Advance Policies
• Federal Agency Partnerships

Life Sciences Summit—Nov. 9-10
• Part of Northwell Hospital System
• World-leaders in bioelectronic medicine inflammation, neuroscience
• Major Clinical Trial center
• Top 6\textsuperscript{th} percentile of all NIH grants awarded to research centers.
• State-of-the-art laboratories—largest genotyping facilities in NY
• 200 patents in 80 distinct technologies, generating dozens of successful biotech start-ups
Cold Spring Harbor Laboratory
Globally Renowned Basic Research Institution

Quantitative Biology

Genomics

Cancer Biology

Plant Biology

Neuroscience and AI
Selection of Companies Using CSHL Technology

Certerra: Novel CNS Drug screening and Development using fluorescent imaging

Clarapath: Automated Pathology Slide Processing

DepYmed: PTP1B inhibitors to Treat Cancer and Orphan Diseases

Envisagenics: Interpretation of Genomic and Other Data to Aid Drug Development

Marvel Genomics: Next Generation Genomics-Based Diagnostics for Early Diagnosis of Autism

Mestag Therapeutics: Treating Inflammatory Disease and Cancer by Targeting Fibroblasts.

Mirisum: COVID Diagnostics Services for Educational and Mouse Models with Reversible Gene Silencing Capability

ProtiFi: Solutions for Proteomics and Protein Analysis

Stoke Therapeutics: New Therapies for Orphan Diseases
• Founded in 1957
• Top 1% of Universities Worldwide and top 50 public universities in US (U.S. News & World Report)
• 3 Nobel prizes (Medicine, Physics, Economics)
• Student enrollment ~25,270, Employs 14,000
• One of only 7 universities to co-manage national laboratory
• Established in 1947 and funded by US DOE
• 7 Nobel prizes
• 7,000 researchers
• Cutting-edge research facilities
  • National Synchrotron Light Source II (NSLS II)
  • NASA Space Radiation Laboratory
  • Brookhaven Linac Isotope Producer
• Commercial products: Levadopa, technetium-99m, Thallium-201
• Access to SBU Medical Center and core facilities
• Incubator Without Walls (IWW) Program
• 60 suites, 62,000/sf total space; majority with windows
• Attractive office suites
• Wet labs equipped with sinks, fume hoods, gas & air
Applied DNA Sciences, Inc. (NASDAQ: APDN) (https://adnas.com/)

Black Diamond Therapeutics, Inc. (NASDAQ: BDTX) (https://www.blackdiamondtherapeutics.com/)

Softheon Inc. (https://softheon.com/)

Biocogent, LLC (https://www.biocogent.com/)

Codagenix, Inc. (https://codagenix.com/)

Vascular Simulations, LLC (now Mentice Inc.) (https://www.mentice.com/)

Mechanismic, Inc. (dba SnappyXO) (https://www.snappyxo.com/)

Sanworks LLC (https://www.sanworks.io/)
Broad Hollow Bioscience Park

- Not-for-profit corporation
- Two buildings, lab space in 500 SF increments
- Vivarium services available
- Shared equipment provided
- Fully outfitted laboratories
- Wet labs supports biology and chemistry
- Farmingdale location, train 55 min to NYC
Contact Information

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• Cold Spring Harbor – (Andrew) - Whitely@cshl.edu
• Feinstein Institute – (Kirk) - KManogue@northwell.edu
• Brookhaven National Labs – (Jack) - jshlachter@bnl.gov
• LIHTI – Dan.Polner@stonybrook.edu
• Broad Hollow Institute - greg.blyskal@bioparkny.org

william.hanes@stonybrook.edu
A Place for Active Lives and Active Minds

www.thecovejo.com ennead architects
The greater New York City marketplace has a number of subclusters emerging in Manhattan, flanked by two major live/work/play environments in the northeast and southwest.

- Long Island City
- Jersey City

- Jersey City is the gateway between New York City and New Jersey

- **Opportunity: Create Global Destination Hub for Life Science/ Tech/ Healthcare**
A Transit-Rich Nexus

Linked to road, rail, river, and air connections, The Cove is accessible from just across town, clear across the country, and around the world.

While three nearby New Jersey Turnpike exits and ample on-site parking cater to car commuters, mass transit links are abundant: a planned ferry stop servicing Manhattan, the NJ PATH train connecting to the World Trade Center station, three nearby stops on the Hudson–Bergen light rail, and access to Amtrak via Penn Station, which integrate The Cove into the rest of the East Coast life sciences corridor.
The Cove is adjacent to Liberty Science Center, NJ’s largest cultural institution and the largest interactive science center in the tri-state area with more than 650,000 guests every year. The Project should also benefit from its adjacency to Liberty Science Center’s recently announced SciTech City development.

SciTech City is a truly unique endeavor and aims to build a science and technology campus providing deep education experiences in a fully immersive environment. The project will be built in phases and includes a K-12 science focused charter school, conference center, 160,000SF of research labs, and housing for approximately 400 graduate students.
Live-Work-Play Community
The Six Pillars of Next Generation Innovation Districts

- Economic Growth
- Health & Wellness
- Social Equity
- Design for Innovation
- Environmental Sustainability
- Governance

The Cove
Environmental Remediation/Brownfield Redevelopment
Environmental Remediation – Phase 1 Completed
Environmental Remediation – Phase 1 Completed
Environmental Remediation – Phase 1 Completed
Aquathermy

Warm Wastewater is Pumped Through Heat Pump

Cooled Wastewater is Returned to Effluent

Expansion Valve

Compressor

Heat Pump

Hot Water is Supplied for Other Uses

Hydronic Heating System

thermal energy recovery from wastewater
LOAD PROFILE

24 Hour Peak Load Profile

MW

- MW Available
- Resi+Life Sciences Heating + DHW Load
Phasing Plan
Vibrant, Diverse, Open

The Cove offers anyone who lives, works, or plays on site abundant options: parks, communal gardens, event venues, terraces, and community gatherings.

A comprehensive life sciences campus demands thoughtfully designed outdoor spaces and innovative indoor-outdoor integration. From lush greenery and vertical gardens to eye-catching biophilic design pieces to event spaces to terraces, The Cove is a waterfront park that brings the outdoors in and the indoors out — for tenants, residents, and the Jersey City community alike.
Equal Parts Campus and Catalyst

Welcome to East Coast evolution. From this inclusive and versatile platform in Jersey City, we’re building inspiration and creating innovation.

- Lab/tech office: 1.4m SF
- Residential: 1.6m SF
- Parking: 1,700 parking spaces
- Gross: +/- 3m SF
- Mixed-use campus setting
- Large floor plates 25,000 - 50,000 SF
- Light and air on all sides of buildings
- Waterfront park
- Surrounded by art and cultural institutions
- Proximity to many higher-education institutions and pharmaceutical companies
- Largest concentration of biomedical engineers in the world
- Over 1,200 3 & 4 star hotel rooms in a 1.25 mile radius
- 30,000+ SF of on-site retail space and services
- Access to light rail, subway, trains, ferries, highways, international airports, and micromobility options
Cultivate an Innovation Environment

Customizable labs and offices function as a technological platform to empower firms to succeed — today and tomorrow.

Spaces
- Academic and commercial labs
- VC offices
- Incubators and accelerators
- Maker spaces
- Core and specialized facilities
- Vivarium
- Multi-tenant and single-tenant floors
- Residential

Amenities
- Lobby
- Conference Center
- Co-working facilities
- Executive conference rooms
- Food courts
- Fitness center
- Terraces
- Retail
- Parks

Infrastructure
- Building support services
- Shared lab services
Thank you!
2021 LIFE SCIENCES
REAL ESTATE DEVELOPMENT SYMPOSIUM
2021 LIFE SCIENCES
REAL ESTATE DEVELOPMENT SYMPOSIUM
Unlocking the Undruggable
To Address Hard-to-Treat Cancers

2021 Life Sciences Real Estate Development Symposium
November 4, 2021
Executive Summary

- Novel peptide-antagonist approach to address undruggable targets in oncology
- Sapience’s PADS platform: discovery engine uncovers peptides that antagonize protein:protein interactions (PPIs)
- Clinical-stage pipeline of peptide-antagonists with multiple shots on goal in hard-treat cancers
- Lead candidate, ST101, is a first-in-class C/EBPβ antagonist, with demonstrated single-agent safety and clinical P.O.C.
- ST316, first-in-class β-catenin antagonist, in IND-enabling studies
- Investment from Celgene and BMS and collaborations with Johns Hopkins, Columbia, and University of Bath
- Experienced team of industry leaders with drug discovery, development and commercialization expertise
Sapience Peptides Target Cancer-Causing Intracellular Protein-Protein Interactions (PPIs)

- Important to maintain normal cellular homeostasis
- Extracellular, intracellular and intranuclear
- Receptors, signaling molecules, transcription complexes
- Aberrant or dysregulated PPIs may lead to cancer
  - Cell cycle proteins
  - Pro-survival factors
  - Integrins
- Considered “undruggable”
  - Small molecules can access the intracellular PPI but cannot disrupt/prevent its formation
  - Large molecules can prevent/disrupt PPI formation but cannot access the intracellular compartment
- Peptides provide new opportunity
  - Small enough to enter cell and nucleus
  - Large enough to prevent/disrupt PPI formation
  - Multiple points of contact provide specificity

Protein-Protein Interactions

Undruggable

Protein-Protein Interactions (PPIs)
ST101 Administration to Patient with Metastatic Cutaneous Melanoma (Skin Cancer) Resulted in a Durable Clinical Response

Baseline  Week 9  Week 15

Partial Response

Confirmed PR
Sapience - Long Term Growth Outlook in 2025

- First peptide-antagonist of β-catenin in the clinic through Phase 2
- ST101 in late-stage clinical trials or nearing the market
- Productive IND engine with new INDs every 6-12 months
- Expansion of pipeline against difficult to drug targets Myc, cJun, and FOXP3
- 1 or more strategic partnerships on pipeline candidates post POC
- Global leader in peptide drug development for hard-to-treat cancers

2025
2021 LIFE SCIENCES
REAL ESTATE DEVELOPMENT SYMPOSIUM
WPH Innovation Objectives

Department Charge

- Consistent with the WPH mission, accelerate the identification and implementation of new technologies and products that will improve the overall quality of healthcare at WPH
- Leverage strategic position to secure upside potential as an early adopter of new technologies

3 Deal Structure Types

- **Collaboration only**: In exchange for services-in-kind receive remuneration typically in the form of equity, revenue share, or royalties
- **Collaboration and investment**: In addition to above, capitalization of companies through open fundraising round
- **Vendor and investment**: In addition to capitalization, utilize products through discounted vendor agreements
- 8 transactions executed, with an additional 4 approved pending finalization
## WPH Innovation Structure

### WPH Executive Leadership

### East Post Road Ventures (EPRV; a wholly-owned subsidiary of WPH)

<table>
<thead>
<tr>
<th>Venture Fund</th>
<th>Accelerator</th>
<th>Innovation Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Source investment opportunities / fundraising</td>
<td>• Commercialization of institutional Intellectual Property (IP)</td>
<td>• Evaluation and management of purchased innovative products/services</td>
</tr>
<tr>
<td>• Assess new companies and products</td>
<td>• Proof of concept laboratory for start ups</td>
<td></td>
</tr>
<tr>
<td>• Due diligence</td>
<td>• Sweat equity deals</td>
<td></td>
</tr>
<tr>
<td>• Board participation / memberships</td>
<td>• Portfolio management</td>
<td></td>
</tr>
</tbody>
</table>
Innovation Roadmap

2022 And Beyond
- Asynchronous Visits
- AI Symptom Checker/Triage
- Video Based Monitoring
- Wearable Devices for Wellness
- Other Technologies Not Yet on the Horizon (e.g. precision medicine, further application of artificial intelligence, etc.)

2021 Focus Area: Remote Patient Monitoring
- Active Remote Patient Monitoring
- Passive Remote Patient Monitoring
- Inside Out Accelerator Curriculum Deployment

2020 Focus Area: Infrastructure and Digital Health
- Policy Development (Committee Charter, Conflict of Interest, Intellectual Property)
- Quarterly Meeting Cadence Established
- 5 Transactions Executed
- WPH Connect Deployment at Scale
- SMS-Based Covid Test Results Initiated
- ED Load Balancing Algorithm Deployment
- Telestroke Launch

2019 Innovation Commencement
- April 2019 – Ad hoc meeting with select board members to pitch idea
- May 2019 – Executive committee formally approved innovation subcommittee
- September 2019 – Inaugural innovation committee meeting
- Hired McDermott Will & Emery to provide legal services
- Established East Post Road Ventures subsidiary
2021 LIFE SCIENCES
REAL ESTATE DEVELOPMENT SYMPOSIUM