

RECENT DEVELOPMENTS IN INNOVATION SPACE IN NEW JERSEY

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ILSE

INSTITUTE FOR LIFE
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We are excited to release this brief report highlighting trends and new developments in the life sciences innovation space in New Jersey. In the past year, two major new incubators were launched and academic and industry support for others were announced. This level of activity and investment highlights New Jersey's focus on innovation and the recognition of the benefits of a collaborative environment for startups. According to reports by the US Department of Commerce - biopharma companies that begin as part of an incubator are four times more likely than non-incubated companies to be successful.

As leaders of The Institute for Life Science Entrepreneurship, Union/Kean University campus (ILSE), we are committed to fostering the entrepreneurial spirit of the industry through incubation, providing tools, resources and support to emerging companies and teams working to improve healthcare. We recognize the importance of physical spaces for entrepreneurs to perform specialized work in a capital-efficient manner and settings that promote the sharing of resources, support services, and best practices. With New Jersey's successful biopharma industry alongside noted life science companies and quality universities and medical schools, we believe the state offers a fertile environment for the next wave of meaningful innovation.

In the past year, there has been a substantial increase in life science incubator capacity, demonstrating a commitment by investors, and resulting in new healthcare discoveries and job and economic growth in the region. By anticipating and meeting the physical space demands for appropriately sized facilities, and providing ongoing support for entrepreneurship, New Jersey will remain a leader in biopharma innovation.

This report has been developed as a resource for all those interested in incubator space in the state including: visionary scientists and entrepreneurs, investors seeking promising start-ups and public officials working to promote investment in the life science sector.

We thank the New Jersey leaders in biopharma innovation for their contributions to this paper, and Kean University for supporting ILSE and offering a dynamic environment for new, promising companies dedicated to improving healthcare.

Sincerely,

Thomas Richardson
President, ILSE

Keith Bostian
Founder and CEO, ILSE

INTRODUCTION

The life sciences sector in New Jersey has witnessed significant developments in the past year. Since mid 2017 both academic groups and biopharma companies opened new incubators with a range of features designed to promote success. It's clear that biopharma companies looking to invest more in innovation and new entrepreneur-scientists with their teams, are choosing to establish or expand operations in the State of New Jersey.

Major incubator launches by Celgene and Princeton University in the first six months of 2018, as well as the more recent interest by Johnson & Johnson to invest and develop its innovative JLABS incubator in New Brunswick Hub, highlight this trend.

These openings were preceded by Hackensack Meridian Health's announcement to open an incubator in Nutley at the Hackensack Meridian Health Medical School at Seton Hall University campus and combined, are a boon to young start-ups.

There are now incubator options around the major universities, including Princeton University, Rutgers University, NJIT, Stevens Institute, and Rowan University.

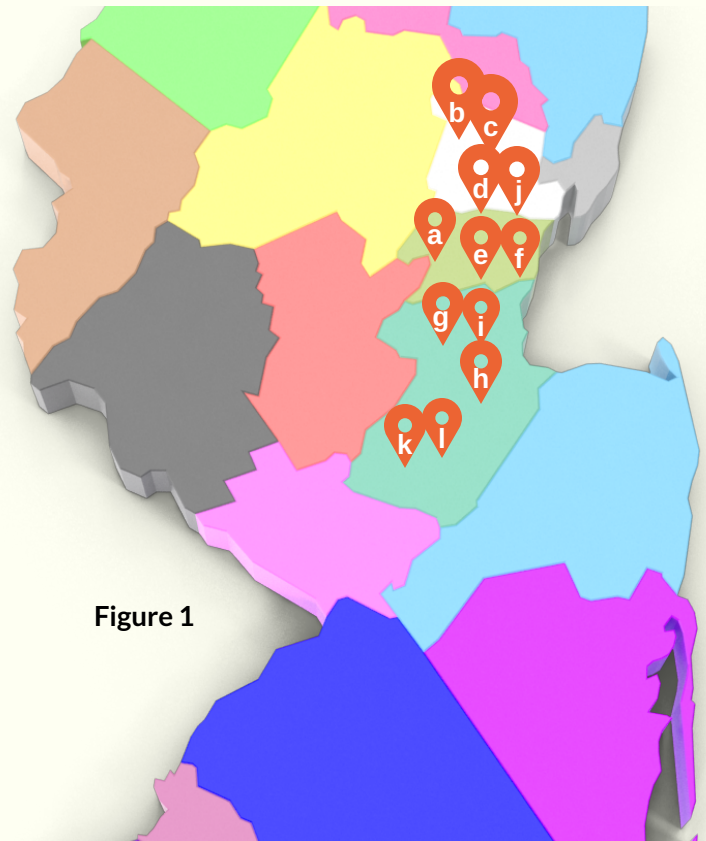
Thus, where two years ago, there were four total life science incubators (the CCIT, EDC, ILSE, and South Jersey Tech Park), there are now six and the CCIT has opened its adjacent New Jersey Biotechnology Development Center in North Brunswick, serving growth stage biotechs.

These facilities (Figure 1) are generally clustered in the central and northern parts of New Jersey and along Interstate 95 – creating a dynamic innovation corridor connecting New Jersey's intellectual and academic hubs to those in New York City and Philadelphia. Rowan University and South Jersey Tech Park are in the southern part of the state and not shown on the map.

The region boasts 3,400 establishments for life sciences (according to a recent report by Jones Lang Lasalle), making our state part of the largest build out of physical infrastructure in the biopharma industry in the world.

There are 1000 biopharma companies in New Jersey, including 13 of the top 20 companies in the world with capacity for early research, pre-clinical development and laboratory testing, clinical research and trials, drug manufacturing and corporate headquarters.

Despite the outstanding physical infrastructure of big pharma facilities, including some legacy structures, and the launch of new dedicated innovation spaces, there is still a significant unmet demand for incubator and 'graduation' or post-incubation facilities.



- a** Thomas O. Daniel Research Incubator and Collaboration Center at Celgene
- b** Hackensack Meridian Health
- c** New Jersey Institute of Technology
- d** Enterprise Development Center at NJIT
- e** Institute for Life Science Entrepreneurship
- f** Kean University
- g** Rutgers University
- h** Commercialization Center for Innovative Technologies
- i** JLABS / New Brunswick Hub
- j** Stevens Institute of Technology
- k** Princeton University
- l** Princeton Biolabs

These are the facilities that range from a few hundred to several thousand square feet and are designed for the small, lean start-ups that will benefit from co-location, shared services and, often, mentoring.

The trend is moving in the right direction to help support life science pioneers but New Jersey's incubator spaces today are at or near capacity. We must continue to build and add quality physical spaces for entrepreneurs to thrive and for New Jersey to continue to be a leader in the biopharma sector.

Incubators share many common characteristics, such as wet labs, offices and common space. And many in New Jersey are naturally located near biopharma companies and/or academic institutions. But they each have specific features that make them suited to distinct types of companies.

Facilities near large research universities generally support the commercial activities of academic labs by translating early concepts into products to be tested in the clinic. For example, the Commercialization Center for Innovative Technologies, the flagship EDA incubator in North Brunswick, houses Rutgers University startups and many product development companies creating new formulations of existing drugs. The size of each facility ranges from 8,000 sq ft to 45,000 sq ft. Some incubators house just a few companies, others over 50 start-ups, depending on size and configuration.

The Center of Excellence in Bridgewater is unique; it sits on the former Sanofi site and houses a range of companies in its 850,000 sq. ft. footprint. Other facilities in New Jersey include Aha!, Atlantic Health Advancements, an idea incubator focused on enhancing care delivery to improve clinical outcomes, launched in November, 2017 in Morristown; SRI in Princeton, a training and business accelerator for life sciences; and specialty facilities at Picatinny Arsenal and Princeton Plasma Physics Laboratories.

Table 1 (Page 6), highlights some basic information on the innovation and incubator facilities and more details for each are included below.

"As the trade association for life sciences in New Jersey, we are energized by the uptick in incubators and innovation in our great state and filled with anticipation at the effect of and resulting increased need for such facilities."

DEBBIE HART
PRESIDENT & CEO
BIONJ

INNOVATION SPACES & INCUBATORS

Thomas O. Daniel Research Incubator and Collaboration Center at Celgene

The Thomas O. Daniel Research Incubator and Collaboration Center at Celgene is an incubator to support and accelerate early entrepreneurial biotech companies that share Celgene's mission, with a strong focus on companies that need access to biological laboratories. Located on Celgene's campus in Summit, NJ, the incubator provides state of the art lab space and support to early entrepreneurial biotech companies focusing on bold science.

Commercialization Center for Innovative Technologies (CCIT)

The CCIT is a signature facility owned and managed by the New Jersey Economic Development Authority boasting many successful company graduates such as Advaxis (Nasdaq: ADXS), Amicus Therapeutics (Nasdaq: FOLD), Chromocell, and GENEWIZ.

Specific services include office hours with venture capitalists and operations and industry experts. The CCIT houses a wide range of companies as part of Technology Center, and recently opened the Biotechnology Development Center, a graduation space for companies that have outgrown traditional incubator space.

"Responding to the needs of the biotech entrepreneurial market is imperative to the State's ability to grow life sciences jobs. In addition to offering affordable space for growing life sciences businesses, the EDA's Commercialization Center for Innovative Technologies (CCIT) provides tenant companies with an array of resources.

This includes help with identifying funding sources, networking events, and a friendly and knowledgeable support staff. For post-incubation stage companies, we recently launched our Biotechnology Development Center, which offers companies access to 2,000-to-8,000-square-foot lab and office modules."

LENZIE HARCUM
NEW JERSEY ECONOMIC DEVELOPMENT AUTHORITY
(EDA) PROGRAM MANAGER, CCIT

Enterprise Development Center, New Jersey Innovation Institute

The EDC is a high-tech and life science business development center focused on helping start-ups and growth companies. Through a broad range of knowledge and resources - from finding the right working space and attracting investment capital, to building staff and developing effective business plans and marketing strategies - EDC gives start-ups a critical edge on their path to commercialization.

The EDC features a strong ecosystem of approximately 90 companies and provides about 30 entrepreneurship events annually including 'Grantsmanship' and various services.

"The EDC is NJ's oldest and largest incubator business development center supporting tech, life sciences and engineering companies with a wide array of facilities, services and connections to accelerate commercialization outcomes."

"We are continuing to evolve our approaches, engaging corporations and the venture community in an open innovation model linking them to the start-up community. Success for the entrepreneur is measured by a reduction in risk and time to market resulting in increased economic development impact in NJ and the region."

JUDITH SHEFT
NEW JERSEY INNOVATION INSTITUTE @ NJIT
ASSOCIATE VICE PRESIDENT
TECHNOLOGY & ENTERPRISE DEVELOPMENT

Institute for Life Science Entrepreneurship

The Institute for Life Science Entrepreneurship is located in Union, the home of Kean University and centered amongst numerous biopharma companies and a robust industry talent pool. The mix of companies at ILSE includes research service firms and pharma spinouts, and serves various sectors of the life sciences industry.

In addition to incubator space, ILSE provides pre-negotiated, reduced-rate consulting expertise via networks of global life science experts and a network of R&D service organizations.

A unique feature of ILSE is the recently launched Microgenomx, a for-profit wholly owned by ILSE providing core microbiology, microbial genomics and microbiome research and services.

"ILSE occupies state-of-the-art facilities at Kean University in Union, NJ and is perfectly located in the biopharma industry and adjacent to NJ Transit within 25 minutes of NYC. As an accelerator and incubator, we work with innovators looking for cost-effective access to NJ and NY biotech leaders."

KEITH BOSTIAN
CHIEF EXECUTIVE OFFICER
INSTITUTE FOR LIFE SCIENCE ENTREPRENEURSHIP

Princeton Innovation Center BioLabs

Princeton Innovation Center BioLabs is Princeton University affiliated co-working space with a mission to foster innovation, collaboration and entrepreneurship, and further develop New Jersey's innovation ecosystem.

Managed by BioLabs, a national network of shared lab and office facilities located in key innovation clusters, the Princeton Innovation Center BioLabs is aligned with Princeton University's educational mission.

The Center offers science start-ups private offices and 'hot desks' for 200+ scientists and entrepreneurs in a state-of-the-art facility with flexible terms for everything from start-ups needing whole labs to an individual needing a single bench.

"Our mission is to help create an ecosystem where innovators can grow and achieve their maximum potential quickly."

"We are excited to collaborate with Princeton University to build an infrastructure which will support academic spin-outs as well as the local entrepreneurial community, with the goal of developing innovative solutions and ground breaking science."

NISHTA RAO
DIRECTOR
PRINCETON INNOVATION CENTER BIOLABS

South Jersey Technology Park, Rowan University

The South Jersey Technology Park (SJTP) is a competitively priced, class "A" facility for start-ups and established companies planning to bring innovative technologies to the marketplace.

Currently home to six Research Centers and 20+ companies in diverse sectors including biotechnology, medical device, diagnostics and digital health, SJTP serves as a home for technology-focused researchers, inventors, entrepreneurs, professors and students offering collaboration opportunities for both academic and industry researchers and entrepreneurs.

TABLE 1. MAJOR FACILITIES SUPPORTING INNOVATION

| Name | Description | Units | Academic |
|---|--|---|--------------------|
| Commercialization Center for Innovative Technologies | wet labs, office space; 46,000 s.f. | up to 30 companies; post-incubation space to 8000 s.f. | Rutgers, Princeton |
| Princeton Innovation Center BioLabs | wet labs, office space; 31,000 s.f. | 68 individual benches, various laboratories | Rutgers, Princeton |
| Thomas O. Daniel Research Incubator and Collaboration Center at Celgene | biological labs, office space; 16,000 s.f. | individual benches | None |
| Enterprise Development Center | wet labs, office space | 600 s.f., up to 90 companies | NJIT |
| South Jersey Technology Park | wet labs, office space; 45,000 s.f. | 22,500 s.f., for about 7 companies; 22,500 s.f. for Rowan academics | Rowan |
| Institute for Life Science Entrepreneurship | wet labs, office space; analytical suites 8,000 s.f. | 600 and 1200 s.f. spaces, 6-8 companies | Kean |

SUMMARY

We are excited by the recent life science developments in New Jersey that include the addition of high-quality incubator spaces and the state's increasing commitment to biopharma entrepreneurship.

With our pharma legacy, central location near major academic centers, business and transit, and favorable economic incentives, New Jersey is increasingly becoming a sought-after location for emerging life science companies. To promote a flourishing hub, we support the accelerated development of incubators with appropriately sized lab and office space for new healthcare visionaries and their teams.

And the momentum is here. Governor Murphy is placing renewed emphasis on infrastructure to drive economic growth and startup innovation. The Economic Development Authority continues to build on its valuable programs tailored to support young companies and the New Jersey Biotechnology Task Force recently released recommendations for the state that includes support for incubators and accelerators.

By prioritizing infrastructure development at the state and local levels and encouraging continued biopharma company innovation investment, New Jersey will become the preferred location for serious life science entrepreneurs.

"Multiple sources of technology and talent drive these micro-economies, and each has a specific opportunity to support entrepreneurship, and contribute to a dynamic innovation ecosystem."

- Thomas Richardson, ILSE