A microscopic image of a plant root system, likely a dandelion, showing a dense network of roots. The roots are primarily red, with several bright green spots scattered throughout, indicating specific areas of interest or activity. The background is black, making the glowing roots stand out.

Life Science Initiative

ANNUAL REPORT: 2021



Empire State
Development

Introduction

In the four years since New York's Life Science Initiative was launched, life sciences have become a powerful growth engine for New York, turning key regions of the state into dynamic life science hubs. Many of the successes described here have come despite the COVID-19 pandemic, which has posed complex logistical challenges for all sectors during the past 18 months. The Life Science Initiative has not missed a beat during this unsettling period, continuing its vital work while shifting focus to a major initiative that directly addresses serious infectious diseases and expands the state's life science economy.

By addressing key gaps in the ecosystem through the projects referred to below and described in the following pages, the Life Science Initiative is transforming the state's life science landscape. These efforts have been paying off in a multitude of waysⁱ, delivering against key measures considered critical objectives of the Life Science Initiative and resulting in:

- Explosive growth of venture capital investments in New York life science companies
- Creation, attraction and retention of life science companies
- Accelerated paths to commercialization
- Increased entrepreneurial talent

Explosive growth of venture capital investments in New York life science companies

Private investment firms poured \$2.3 billion into New York State life science companies between October 2019 and September 2020, tripling the \$820 million invested the previous year and making New York third in private investment dollars for life sciences.ⁱⁱ This influx of capital substantially improved a key marker of commercial life science activity: the amount of VC investments per dollar of NIH funding to institutions in the state, bringing it to \$.73 per \$1.00 in 2020. This was more than double the \$0.30 per NIH dollar amount seen in 2016 and many times the \$0.06 VC investment per NIH dollar seen in 2013.

ESD projects have been important contributors to the growth of VC investment in the state:

- **Empire Discovery Institute (EDI)**, created to fast track translation of basic life science research from its three partner research organizations, secured investment funding of up to \$65 million under an agreement with Deerfield Management and anticipates signing a five-year partnership agreement with a top-10 global pharmaceutical company before the end of the year; this will further strengthen Western New York and the Finger Lake regions as formative life science clusters. EDI also is negotiating a strategic partnership with a major pharmaceutical contract research organization that will include yearly financial investments into EDI and its programs.
- Since the start of **SOSV's IndieBio New York** startup development program in 2020, SOSV has facilitated the funding of its graduating companies to the tune of \$35.7 million: \$9.5 million directly from SOSV, \$17.6 million in external equity and notes, and \$8.6 million in grants. IndieBio invests between \$275,000 and \$525,000 initially in every startup

participating in its program and has developed a \$60 million PFNYC Sidecar Fund for investment in these companies. The majority of the Sidecar fund is set aside solely for companies in New York state or those with plans to set up operations in New York state.

- **SOSV's IndieBio, RebelBio and HAX** programs have also generated big winners for New York's life science community, with NotCo moving its global headquarters to New York in 2020 and receiving a \$225 million investment in 2021; and OpenTrons receiving more than \$200 million in investment in 2021, along with hundreds of millions in revenues for their Pandemic Response Labs and liquid handling robotics systems.
- Since opening of the **JLabs@NYC** incubator in 2018, participating companies have attracted more than \$1 billion in investment funding (through 2020).
- The first six recipients of the **New York Fund for Innovation and Scientific Talent (NYFIRST)** grants engendered an additional \$24.8 million in funding, a return on the state's investment of more than 4:1.ⁱⁱⁱ
- Looking ahead, the recently announced **New York Biodefense Commercialization Fund** will require a 100% match for any grants of \$2.0 million or more made to startups and emerging companies.

Creating, attracting and retaining life science companies

The co-location of life science firms generates network effects by allowing them to benefit from their proximity to each other's assets, activities, and talent. By seeding New York's already budding industry clusters, the Life Science Initiative is investing in a connected life science ecosystem statewide. In this way, New York regions are supported to build life science capacity locally, collaborate regionally and connect globally. New company growth and retention is an important goal of the Life Science Initiative:

- Twice yearly, **IndieBio New York** selects approximately 10 companies from a pool of hundreds to participate in its accelerator program, attracting to New York promising startups from around the world. From the 28 companies selected by IndieBio to date, seven companies have elected to relocate to New York, and four companies already resident in New York remained. As the start of the first cohort coincided with COVID distancing requirements, every company in the first cohort participated remotely in all IndieBio activities, with decreasingly smaller number of companies working remotely in the second and third cohorts. The state also is benefitting from IndieBio's San Francisco accelerator, as two companies from their 2021 program recently relocated to the state -- a clear indicator of New York's rise in competitiveness with previously established life science clusters in Massachusetts and California. SOSV also anticipates that its new space in New York City will strengthen regional connections with other life science companies and educational institutions.
- **SOSV/IndieBio New York** recently increased its investment in and commitment to New York in signing a 10-year lease for 25,000 ft² of prime New York City real estate. Recognizing the impact life sciences is having in New York, the building's CEO proclaimed, *"This is not just a typical lease, it's an investment in a new industry that is making New York a top global technology hub for life sciences."*^{iv}

- Since its opening, **JLABS@NYC** has hosted 60 life science startups, including 38 from New York state.
- By advancing innovations to address serious infectious diseases, such as COVID-19, the \$40 Million **Biodefense Commercialization Fund** also will accelerate growth of New York’s life science industry. Initial applications to the Fund demonstrate the potential to attract companies from within and outside of the state: Of the 177 applications received, 53 applicants were invited to submit more detailed information in a long proposal. When announcing application availability, Governor Kathy Hochul proclaimed the Fund *“will help the next generation of startups and early-stage companies combat infectious diseases while creating jobs and investment in New York’s life science industry.”*

Accelerated paths to commercialization

Life science start-ups typically face significant funding challenges as they undertake the early stage research needed for clinical investigations. This “valley of death” threatens the viability of startups and the promising research they are pursuing. Even more mature companies can face funding challenges. Recognizing the serious impact of funding challenges, several ESD initiatives are smoothing the path for startups and emerging companies:

- **EDI** was established to fast track translation of the basic life science research conducted at its three partner institutions into a robust pipeline of clinically relevant and commercially viable therapeutics, is currently providing financial support and drug development know-how to five projects, and expects to add another three to this roster early in 2022. EDI’s support will ensure these projects will not be stymied or slowed because of insufficient funding or lack of pharmaceutical expertise. Each project supported by EDI receives a minimum of \$250,000 in funding and may be eligible to receive up to \$7.5 million in support over a five-year period based on progress of the research towards commercialization.
- The **IndieBio New York** startup development program provides scientists from New York’s leading academic and research institutions with resources, both financial and mentoring, to transform scientific innovations into commercially viable products and services. Furthermore, IndieBio NY not only facilitates the growth of these startups for the duration of the accelerator program, but also provides a year-round biotech hub to foster innovation and commercialization.

Increased Entrepreneurial Talent

New York State has a growing need for life science entrepreneurial talent, especially given the state’s increased attractiveness to private investors as a hub for emerging life science companies. By creating a pipeline of experienced and knowledgeable life science entrepreneurs, we are helping each industry cluster maximize its growth potential.

- Grants to medical schools from the **New York Fund for Innovation and Scientific Talent (NYFIRST)** are incentivizing exceptional researchers to bring their patentable technologies to New York medical schools. To date, six NYFIRST grants of up to \$1 million each have been made to attract top researchers from Massachusetts, Texas, Georgia, Maine and New Jersey,

as well as to retain top scientists in New York. Each researcher brings commercially viable research to New York, while also attracting additional talent and potential for jobs across the state.

- Five business schools in the state are receiving **Life Science Entrepreneurial Development Grants** of up to \$500,000 each to develop and implement new MBA concentrations or certificate programs in life science entrepreneurship. This is the first time that a graduate business program dedicated to life science entrepreneurship will be available in the state.

The accomplishments of the Life Science Initiative since its inception have primed it to continue an upward trajectory, strengthening the state's life science ecosystem and positioning New York as the place where life science companies will thrive.

The following pages report on the operations and accomplishments of New York State's Life Science Initiative during 2021.^{vi} The report highlights a number of exciting life science projects that have already been initiated, provides detail on the commitments to date of the \$520 million in planned investment, and lists other relevant information with respect to the operations and accomplishments of the Initiative.^{vii}

New York State Life Science Initiative Resources

\$320M

Programs, Grants and
Project Funding

**Strategic initiatives to
grow New York State's
life science economy**

\$100M

Research and
Development Tax
Credits

**Refundable tax credits
for R&D expenditures,
available for new life
science companies^{viii}**

\$100M

Excelsior Jobs
Program Tax Credits

**Tax credits for job
creation initiatives^{ix}**

\$100M+

Private Investment

**Matching funds
expected from
industry partners for
public-private
partnerships**

Overview

Since its April 2017 legislative authorization, the Life Science Initiative has made active grant commitments totaling \$170.8 million in state funding for 9 distinct projects, which together are expected to leverage more than \$109 million in matching co-investment over five years (co-investment in Biodefense Commercialization Fund not included). These projects and their awards from the Life Science Initiative include:

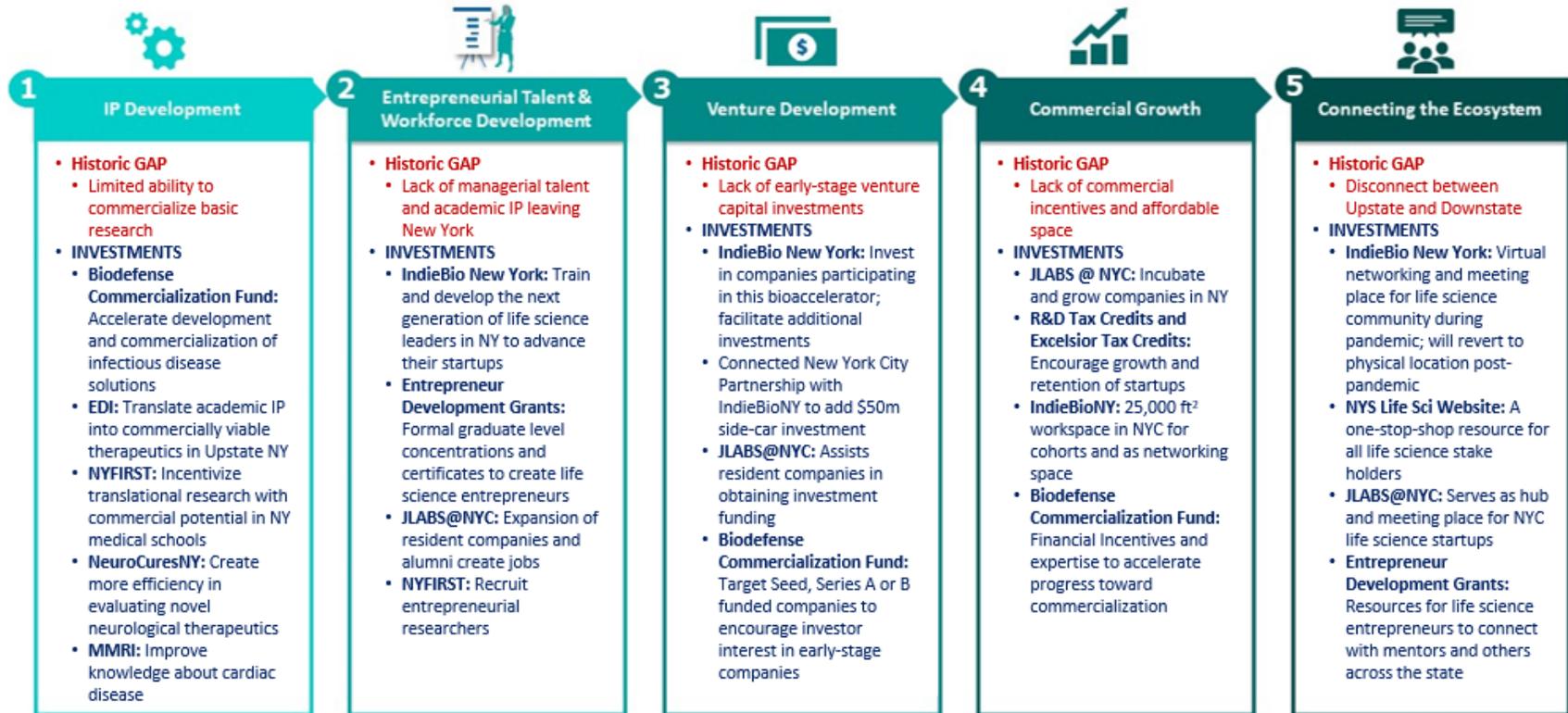
- The Biodefense Commercialization Fund (\$40 million);
- The Empire Discovery Institute (\$37.05 million);
- The JLABS @ NYC incubator construction at the New York Genome Center (\$17 million);
- The New York Fund for Innovation in Research and Scientific Talent (NYFIRST) (\$15 million);
- Public-private partnership between the Wadsworth Center and Infectious Disease Connect, formerly ILÚM Health Solutions, (\$22.4 million);
- The NeuroCuresNY clinical trials network (\$5.5 million);
- IndieBio New York Bioaccelerator Program (\$25 million);
- The New York Life Science Entrepreneur Development Grant Program, Stages 1 and 2 (\$2.85 million); and
- The Masonic Medical Research Institute renovation (\$6 million).

To achieve its mission of growing and retaining startups in New York, ESD is implementing a multipronged approach to life science cluster development. This approach is aligned with the way in which life science industry clusters establish and thrive. Thus far, the Initiative has made investments that:

- leverage existing life science intellectual property from New York academic institutions;
- attract private venture capital funding;
- enhance and train talent;
- support entrepreneurs and promising startups;
- support innovation while addressing public health concerns;
- build infrastructure; and
- provide incentives for economic growth.

Strategic Approach

ESD’s strategic approach is to implement programs that fill historic gaps in New York’s life science ecosystem.



Life Science Projects, 2021

Accelerating innovation to improve resiliency: Biodefense Commercialization Fund

COVID-19 was a wake-up call to the profound impact – on individual and national health, the economy, and individual well-being – of serious infectious disease and a reminder of the need to increase our resilience against future infectious threats. The **Biodefense Commercialization Fund**, included in the 2021 State of the State address, will help ensure that New Yorkers are better prepared for the future by investing in the development and commercialization of innovations that address serious infectious health threats, including COVID-19 and its variants, while also supporting and growing the state’s life science economy.

When announcing the opening of applications for the Fund, Governor Kathy Hochul proclaimed, “The Biodefense Commercialization Fund will help the next generation of startups and early-stage companies combat infectious diseases while creating jobs and investment in New York’s life science industry. We want to ensure that New York is where these groundbreaking companies start and operate, and that our state is at the center of the search for solutions to the world’s most pressing problems.”

Interest in the Fund has been tremendous, highlighting recognition of the need to address infectious threats and of the large number of innovative companies that are emerging across the state. A total of 177 applications were received by the October 4, 2021 deadline, including several submissions from companies in other states and countries.

The Fund will provide grants to life science startups and other burgeoning companies that are developing promising diagnostics, vaccines, therapeutics, and other innovations that prevent, treat or mitigate serious infectious disease threats, as well as to New York’s academic research institutions to fast track advanced intellectual property. Grants of up to \$4.0 million will be available for startup companies and up to \$500,000 for academic institutions.

All companies receiving grants are required to remain in New York State for three years beyond completion of the grant, and awardees receiving \$2 million or more will be required to provide a 100% match. ESD will award grants through a competitive grant solicitation to qualifying applicants twice annually until the funds under this program are fully committed.



Creating a Home for New York Startups: **IndieBio New York -- New York's Bioaccelerator**

Until recently, life science companies tended to establish themselves in places other than New York, where the environment was more conducive for life science startups to thrive. This paradigm has been shifting, due in part to ESD's support of SOSV – recognized globally as a leading life science venture capital investor and founder of IndieBio San Francisco – to open a bioaccelerator in New York. SOSV's New York accelerator program, IndieBio New York, is designed to attract startup companies to New York and ensure they have access to the financial and experiential backing to support long-term growth here.

In addition to supporting each founder with at least \$275,000 over the course of a four-month boot camp, IndieBio New York provides free lab space and daily guidance to each company participating. Working side-by-side, founders learn not only from their mentors but also from each other, forming a support network that endures long after the program ends.

SOSV has completed raising a \$60 million sidecar fund that will provide additional funding for select companies that graduate from an IndieBio cohort. The vast majority of that fund – 85% -- will be used strictly for companies that have plans to operate in New York. In addition, SOSV's Genesis Consortium and SOSV's Decarbonization Consortium (focused on climate change) are

investment pools that will be offered to all qualified start-ups graduating the IndieBio programs in New York and San Francisco in 2021 and 2022, enabling another ~\$30 million in investment in the short term.

Results for the program to date prove how valuable dedicated investing and mentorship are to young life science companies in realizing their potential. As of October 2021, IndieBio New York has facilitated private investment of \$10.5 million for its first cohort of companies, and \$5.8 million for its second cohort. And, since completion of the program, nine companies have successfully raised a minimum of \$500,000 each from external investors, demonstrating how IndieBio New York is able to position their participants for future success. IndieBio New York is currently working with its third cohort of start-ups, selected from an applicant pool of 526 companies, and the same or an even greater level of success is expected.

IndieBio New York is focused on building a strong network that connects entrepreneurs with investors, mentors and each other in the greater New York metropolitan region. Their most recent Demo Day – held virtually due to the continuing pandemic for the second cohort of start-ups – was attended by 877 members of the life science community, including 314 investors.

Thus far, six companies have elected to relocate to New York upon completion of the program, while two additional companies from the San Francisco bioaccelerator also have moved to New York, due in part to the growing potential of our life science ecosystem. Through the first three cohorts, 35 new jobs in New York have been created by companies that completed the program.

SOSV’s commitment to New York and to the New York life science economy is evidenced by its recent closing on 25,000 ft² of prime laboratory space at 7 Penn Plaza in New York City. This 10-year lease will create additional jobs and strengthen relationships with both companies and research institutions throughout the tri-state area.



Converting Basic Research into Commercial Opportunity: Empire Discovery Institute

Many life science start-ups face significant funding challenges as they undertake the early stage research needed to meet key pre-clinical milestones. This “valley of death” threatens the viability of startups and the promising research they are pursuing. Recognizing that early stage discovery research is often threatened by significant funding challenges and that this represents a serious loss, in 2018 ESD supported the creation of the Empire Discovery Institute (EDI), a groundbreaking partnership of three prominent upstate New York research institutions. EDI harnesses the expertise of its Advisory Board, a world-class team of scientific, technical, and business development veterans, to fast-track translation of its institutional partners’ most promising discoveries into a pipeline of clinically relevant and commercially viable therapeutics.

EDI was created, in part, to better capture the value of the \$1.15 billion of NIH funding over the past five years that has enabled EDI’s partner organizations – the University at Buffalo, University of Rochester and Roswell Park Comprehensive Cancer Center – to create a robust research pipeline; to advance research to commercial viability; and ultimately to create companies that will support life science clusters in Western New York and the Finger Lakes. Equally important is the spotlight that EDI will shine on the value of this research for investors. EDI is delivering on all fronts.

In its first call to its partner organizations for research projects to support, EDI received 31 applications and selected five as the first recipients of its Medicines Discovery Award. These projects tackle a broad range of therapeutic areas, including cancer, neurological disease, immunological and genetic disorders. A second call for applications was initiated in September 2021, and 17 new applications were received. EDI expects to announce the winners from this call in early 2022.

Each project selected to receive a Medicines Discovery Award receives a minimum of \$250,000 in total program support. As projects continue to show promise and progress toward commercialization, they may be eligible to receive up to \$7.5 M over a five-year period.

This funding will be made possible through the Empire Discovery Institute Working Capital Grant from ESD and strategic investments from venture investors and others. EDI’s goal of attracting investment dollars to upstate New York is already being realized. Early in 2021, EDI executed a \$65 million investment collaboration with Deerfield Management. Before the end of the year, EDI anticipates signing a five-year partnership agreement with a top-10 global pharmaceutical company that is expected to provide yearly support into EDI’s operations and share project development costs for promising cardio-metabolic disease projects.

In addition, EDI is negotiating a strategic partnership with a major pharmaceutical contract research organization that is expected to include yearly financial investments into EDI and its programs.



Developing Entrepreneurial Talent: Life Science Entrepreneur Development Grant Program

A key goal of the Life Science Initiative is to attract venture capital investments in NY-based life science companies, yet a lack of entrepreneurial talent has often been cited as a significant impediment to this goal. While the solution is multi-pronged, the Life Science Initiative has begun to address one aspect of this problem by supporting the creation of specialized MBA and certificate graduate programs in life science entrepreneurship.

ESD is providing funding of up to \$500,000 to five business schools, each of which are working with a medical school or life science graduate program, to develop and implement a graduate curriculum that will equip students with science or business backgrounds with the interdisciplinary skills needed to manage innovation-driven businesses. The first classes will launch within the next 12-18 months, with approximately 250 newly minted life science entrepreneurs expected to graduate each year once these programs are fully implemented. As these will be the first graduate business programs in life science entrepreneurship in New York State they will help to retain home grown talent and attract students from other states.

The schools selected to receive ESD funding for curriculum implementation are:

- Cornell University, SC Johnson College of Business (Southern Tier & New York)
- Rensselaer Polytechnic Institute, Lally School of Management (Capital)

- Rochester Institute of Technology, Saunders College of Business (Finger Lakes)
- Stony Brook University, College of Business (Long Island)
- University at Buffalo, School of Management (Western New York)



An Incubator for Innovation: JLABS @ NYC

To foster idea generation and breakthrough innovations in the life science industry, ESD awarded capital funding of \$17 million to the New York Genome Center to support the launch of JLABS @ NYC, a collaboration between the New York Genome Center and Johnson & Johnson Innovation. JLABS@NYC is serving as an incubator for life science companies.

Since the opening of JLABS @ NYC in June of 2018, 60 companies (including 38 from New York) have been able to participate in the Johnson & Johnson Innovation –JLABS (‘JLABS’) community, which provides not just laboratory space and programming about various aspects of life science entrepreneurship, but also a place for companies to gather and learn from each other. JLABS’ aim is to contribute to the expansion of both the life science ecosystem in New York State and in growing the New York City life science cluster. JLABS@NYC has not only created jobs, but also has created the much talked about “industry buzz” important for attracting other companies. In only three years, JLABS @ NYC companies have created 341 new jobs and have collectively raised \$1.4 billion in financing and strategic relationships (secured and contingent).

In addition, a number of JLABS companies and alumni are conducting research relevant to COVID-19. This work includes novel ways aiming to rapidly detect and diagnose infection by pathogens,

therapeutics for pandemic viral infections and more common respiratory viruses. JLABS @ NYC also houses companies selected for BLUE KNIGHT™, a joint initiative between JLABS and the Biomedical Advanced Research and Development Authority (BARDA), which is focused on supporting companies with innovative potential solutions for public health threats and emerging diseases.

341

New jobs created by
participant companies

\$1.4B

In funding raised by
participant companies

Tackling Brain Disability by Enabling More Efficient, Less Costly Clinical Trials: [NeuroCuresNY](#)

A rapidly growing epidemic is the physical and cognitive disability due to brain diseases, including stroke, traumatic brain injury, Parkinson’s disease, and Alzheimer’s disease. With an aging population and our ability to keep patients alive longer after acute injuries, current estimates are that by 2050, stroke and Alzheimer’s disease alone will cost 1.4 trillion dollars in health care costs and lost productivity in the United States. Identifying a strategy to change this trajectory will bring enormous economic opportunity. NeuroCuresNY is a catalyst to help realize this opportunity.

NeuroCuresNY (NCNY) – a not-for-profit initiative formed by Burke Neurological Institute, the University of Rochester and the National Center for Adaptive Neurotechnologies (formerly at the Wadsworth Center) – is creating a unique clinical trial network and process for testing drugs and other therapeutic strategies to treat chronic neurological impairment and disability, an area of research often overlooked because of the difficulty and cost of conducting trials. NCNY’s unique platform is designed to reduce infrastructure costs for each trial and enable trials to run more efficiently, with the goal that more therapeutic modalities will be evaluated more efficiently.

To date, NCNY has conducted much of the legwork needed to identify best practices in patient recruitment, protocol development, organizational structures that can effectively implement the demonstration trial, and has evaluated interest from pharmaceutical companies with an appropriate neurological therapy in phase 2 development. NCNY has selected a pharmaceutical

sponsor and is in the final stages of a protocol for the demonstration trial, to also be implemented in the overall platform. The final stage will involve incorporating that sponsor's intervention into an exciting clinical trial to be initiated in 2022.

It is anticipated that NCNY's cost-efficient platform will interest companies eager to test their therapies more rapidly and more efficiently. This will help to commercialize research and intellectual property resident in the state's academic institutions, strengthen relationships with potential sponsors of future trials for the network, and attract companies to the state.

Advancing Public-Private Partnerships in the Life Science Sector: IDC-Wadsworth Partnership: Identifying Antibiotic-Resistant Infections

As one of the oldest and largest state public health laboratories in the nation, the Wadsworth Center Laboratory has unique capabilities and expertise that can attract and support innovative commercial partnerships and private investment. ESD secured Infectious Disease Connect (IDC), formerly ILUM Health Solutions, a former subsidiary of Merck and Co., to partner with the Wadsworth Center on a mission to develop and implement an infectious disease surveillance network that quickly identifies and contains antibiotic resistant pathogens. This partnership relocated IDC from New Jersey to the Capital Region to leverage New York State's unique public health research assets and brought new commercial life science activity to the Capital Region while supporting the lab's crucial public health mission.

Phase 1 of the project piloted a software solution at several hospitals in the NYU Langone and Northwell Health hospital systems that connects these hospitals to the Wadsworth Lab. This pilot has now been successfully completed. Because of COVID-19, the longer-term project to expand use of this software to hospitals across the state has been put on hold.

Enhancing Translational Research Strength: New York Fund for Innovation in Research and Scientific Talent (NYFIRST)

A \$15 million competitive grant program for medical schools in New York State, NYFIRST encourages the recruitment or retention of exceptional translational life science researchers by

supporting the establishment or upgrading of their laboratories and by providing working capital. Medical schools may receive awards of up to \$1 million and are required to provide a match of 2:1 for each grant.

To date, ESD has announced NYFIRST grants of up to \$1.0 million each to:

- Columbia University School of Medicine (two awards: 2018 and 2019);
- Icahn School of Medicine at Mount Sinai (2018)
- SUNY Upstate Medical University (2019)
- University of Rochester (two awards: 2018 and 2019)

According to the Associated Medical Schools of New York (AMSNY), the first two rounds of NYFIRST awards have led to the creation of 160 jobs, directly and indirectly, and attracted approximately \$24.8 million in funding, a return on investment in excess of 4:1.



Masonic Medical Research Institute

Masonic Medical Research Institute (MMRI) is an internationally recognized biomedical research institute focused on unraveling the mechanisms underpinning the cause of cardiac disease. The Life Science Initiative awarded a \$6 million capital grant to MMRI to support Phase II of the facility's renovation. The project entails reconstruction and retrofitting of 5,500 square feet of recently demolished basement space into a modernized laboratory space to allow for the recruitment of up to five new faculty members.

- MMRI will finance \$9 million of the project
- The total project cost is \$15 million
- The project will create 25 new jobs

Moving Forward

By listening to the state's life science community and understanding its needs, the New York State Life Science Initiative is building a strong foundation for retaining and nurturing homegrown life science companies, while also attracting new startups and jobs to the state. The \$170.8 million in total investments currently committed are specifically designed to address the long-identified gaps and opportunities in the state's life science ecosystem.

Venture capital is pouring into New York's life science ecosystem at an unprecedented rate. Private investment in New York life science companies tripled in 2020 to more than \$2 billion. New York State now ranks third in private investment dollars for life science, up from ninth in 2015 and 15th in 2011. In 2020, NYC life science startups secured 26 VC funding rounds worth at least \$20 million, more than double the number from only three years earlier.

New York is already poised for greater gains in 2022, with ESD grantees like EDI and IndieBio New York anticipating additional investment, such as a five-year partnership agreement that EDI anticipates signing with a top-10 global pharmaceutical company by the end of the year. Select IndieBio New York companies will soon be able to receive additional investment from SOSV's Decarbonization Fund. The New York State Biodefense Commercialization Fund will announce its first grant recipients, and schools receiving ESD funds for the Entrepreneur Development Grants will begin training future business leaders for New York State's growing life science ecosystem.

Other industries are recognizing the value that can be created by the life science industry in New York State and are nurturing the environment even further. Real estate development specifically designed for life science startups (including the 25,000 ft² of space in NYC just leased by SOSV), and other auxiliary services needed to support emerging life science clusters will create an even more robust ecosystem that facilitates cross-pollination between industries.

Summary of Life Science Initiative Operations

September 2018 – October 2021

Dedicated Life Science Initiative Funding				
Funding Source	Appropriated	Committed	Disbursed	Remaining
Grants, Project Funding and Program Costs	\$320,000,000	\$170,800,000	\$40,219,162	\$279,780,838

Other State Life Science Incentives				
Incentive	Total Available	Status	Credits Allocated	Description
Excelsior Jobs Program	\$100,000,000	Life science industry allocation implemented in April of 2017. Currently accepting rolling application submissions.	From inception to date, eight companies have received awards, totaling \$5.47 million in credits. These companies are anticipated to create 327 net new jobs.	Information about the program, regulations, eligibility and how to apply can be found at: https://esd.ny.gov/excelsior-jobs-program
Life Sciences R&D Tax Credit Program	\$100,000,000 (capped at \$10,000,000 per year)	Applications accepted on a rolling basis as long as funds are available.	<i>From inception to date, tax credits totaling \$9,235,550 have been issued to 41 applicants with total qualified expenses of \$77,886,951.</i>	Information about the program, regulations, eligibility and how to apply and an application can be found at: https://esd.ny.gov/life-science-tax-credit-program
Total	\$200,000,000			

Active Life Science Project Commitments			
Project	Total Project Cost	Life Science Initiative Funding Commitment	Disbursed
NYS Biodefense Commercialization Fund	\$ 40,000,000	\$ 40,000,000	\$ 0
Empire Discovery Institute (EDI)*	\$ 47,400,000	\$ 35,400,000	\$ 6,500,000
*EDI garnered an additional investment of \$65 million from Deerfield Management for a five-year collaborative research investment agreement.			
University of Rochester (EDI Planning Grant)	\$ 1,650,000	\$ 1,650,000	\$ 1,650,000
NYFIRST	\$ 45,000,000	\$ 15,000,000	\$ 994,530
JLABS @ NYC	\$ 17,000,000	\$ 17,000,000	\$ 17,000,000
IDC/Merck-Wadsworth Partnership	\$ 59,883,000	\$ 22,400,000	\$ 4,524,633
Masonic Medical Research Institute	\$ 15,000,000	\$ 6,000,000	\$ 0
Burke Neurological Institute (NeuroCuresNY Planning Grant)	\$ 795,000	\$ 500,000	\$ 500,000
NeuroCuresNY Working Capital	\$ 9,581,732	\$ 5,000,000	\$ 1,500,000
SOSV Bio-Accelerator Program**	\$ 35,100,000	\$ 25,000,000	\$ 7,500,000
** In addition to providing at least \$275,000 to each company in a cohort, IndieBio is raising a \$60 million fund to be used for the benefit of companies that have graduated from IndieBio and have plans to operate in New York. Investment from a \$10 million fund raised by the Genesis Consortium also will be offered to all qualified startups graduating the IndieBio programs in New York and San Francisco in 2021.			
Life Science Entrepreneur Development Grant Stage I	\$ 350,000	\$ 350,000	\$ 50,000
Life Science Entrepreneur Development Grant Stage II	\$7,500,000	\$2,500,000	\$ 0
Total	\$279,259,732	\$170,800,000	\$40,219,163

Endnotes

ⁱ Because of the long lead time required for revenue generation by life science startups, job creation in the short term has not been considered a valuable measure of success. Nonetheless, the Life Science Initiative's programs have been responsible for the direct creation of 560 jobs.

ⁱⁱ Partnership Fund for New York City. (April 2021). *New York's Life Sciences Industry Enters High-Growth Phase for Investment & Job Creation*. <https://partnershipfundnyc.org/wp-content/uploads/2021/04/New-Yorks-Life-Sciences-Industry-Enters-High-Growth-Phase-for-Investment-Job-Creation-Partnership-Fund-for-New-York-City-April-2021-1.pdf>

ⁱⁱⁱ Associated Medical Schools of New York State (AMSNY)

^{iv} "Life Sciences Accelerator IndieBio Inks Deal for 25K SF at Feil's 7 Penn Plaza," *Commercial Observer*, October 19, 2021. <https://commercialobserver.com/2021/10/indiebio-sosv-lease-7-penn-plaza/>

^v <https://www.governor.ny.gov/news/governor-hochul-announces-opening-new-york-states-new-40-million-biodefense-commercialization>

^{vi} This annual report has been prepared in accordance with the statutory requirements of Section 16-aa (5) of the New York State Urban Development Corporation Act (Chapter 174 of the Laws of 1968, as amended). Of note, for some categories of information, such as economic impacts and federal funding awards, limited data were available for the reporting period due to a lag in available data and the early stages of many initiatives. Additional information on these topics will be provided in subsequent annual reports.

^{vii} The report does not detail all life science activities under way in the state, nor does it articulate every asset, incentive or benefit available to a life science company operating in New York State.

^{viii} Information about the program, regulations, eligibility, how to apply and an application can be found at: <https://esd.ny.gov/life-science-tax-credit-program>

^{ix} Information about the program, regulations, eligibility and how to apply can be found at: <https://esd.ny.gov/excelsior-jobs-program>

Cover Art: Microvascular system of the retina: Microvascular system of the mouse retina visualized with a Sulforhodamine B live stain (red). A subset of retinal ganglion cells express the yellow fluorescent protein (green). Thanks to Botir T Sagdullaev, PhD, Burke Neurological Institute, who provided this image.