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Loretta Beine, Senior Director of Industry Development for Life Sciences, Empire State Development (ESD) explains the organization's broader role in growing New York State's life sciences sector beyond direct funding. As New York State's chief economic development agency, ESD focuses on supporting startups, attracting new investment, and job creation to build the New York life science ecosystem.

Could you start by introducing yourself and outlining Empire State Development's broader role in supporting the life sciences sector of New York State?

I have been working at Empire State Development (ESD) for 25 years. In the beginning, I worked in regional offices on the economic development side, providing financial and technical assistance to companies across all industries—food manufacturing, fashion manufacturing, and everything in between. A few years into that role, I moved to the strategic business division of ESD, which has a different focus. Rather than concentrating on what is happening within a specific region, we look at strategic industries across the entire state, as well as business attraction. We examine the ecosystem, assess workforce needs, and work to improve conditions for growth across sectors such as film and television, materials processing, industrial machinery and green technology. I have been focused on life sciences for about 13 years.

I support businesses on a one-to-one basis through New York economic development funds and pay-for-performance tax credits aimed at helping companies create jobs or make capital investments. This work complements the State's Life Sciences Initiative, which New York State launched in 2017 with USD 620 million, and takes a broader approach. We were determined to be thoughtful and strategic about investments to ensure reliable outcomes. The Life Science Initiative funding is specifically designed to improve the industry ecosystem by growing, attracting and retaining life science companies and initiatives focused on commercialisation of innovative life science research.

New York has long excelled at cutting-edge research. Now we're focused on ensuring those discoveries translate into real-world innovation through companies in New York State. With advances in genomics and open-source connectivity, researchers are now more willing to collaborate and find ways to commercialise their research. The Life Sciences Initiative supports larger strategic plays, such as our support of Excelsior Sciences, a preclinical drug discovery lab driven by AI and robotics to accelerate the drug discovery process. A recent $70 million Series A raise has made it clear that Excelsior Science's technology could be game-changing.

What have been some of the most impactful programs to come from the Life Science Initiative?

When I first began working in this industry, companies consistently told us what they were missing and what they needed to succeed. The primary concern was the lack of wet lab space. Researchers working at universities who wanted to spin out and create companies had nowhere to go because real estate developers did not want to take the risk; office space was far more economical to build.

In response, the state partnered with Empire State Development's Division of Science, Technology and Innovation (NYSTAR) to create incubators – not just in life sciences, but across technology sectors. These incubators gave investigators and entrepreneurs lab space to advance their research. As the incubators' successors developed, we created accelerator spaces as well.

We worked with IndieBio to bring its successful accelerator model from the West Coast to New York in 2020. Each year, this accelerator provides startups with the lab space, investment capital and hands-on mentorship and entrepreneurial training to two cohorts of approximately 10 companies each. This programme has been a great success, with many of its cohort participants successfully raising substantial funding and reaching the marketplace.

Just recently, a group from the Puerto Rico Trust for Science and Technology benefited from IndieBio's intensive entrepreneurial bootcamp and access to investors. Other programmes funded by the initiative include the Biodefense Commercialization Fund, launched in 2021. This programme was created to accelerate the development and commercialisation of life science innovations that address infectious disease threats. The Fund has awarded grants to startups and academic institutions that are developing diagnostics, vaccines, and therapeutics that mitigate infectious disease and its spread. Another initiative we are particularly proud of is the Empire Discovery Institute (EDI), a multi-partner collaboration with the University of Rochester, the University at Buffalo, and Roswell Park Comprehensive Cancer Center in Buffalo.

Each year, EDI identifies a small number of promising research projects from these institutions to receive its Medicines Discovery Award, which helps to fast track the research to expedite its path to commercialisation. Additionally, we offer a life sciences research and development tax credit. It is a 100 per cent refundable tax credit for companies that are five years old or younger. If a company is conducting R&D directly on their payroll in New York State, they can apply for three consecutive years of up to USD 500,000 per year—potentially USD 1.5 million total.

Even newer companies that have to outsource their R&D, which makes them ineligible for the full benefit, might be eligible for a partial credit – which helps increase their awareness of the resources they can tap to grow in New York State . These programmes are designed to advance New York State's ecosystem, move the sector towards commercialisation, encourage collaboration, and leverage the resources that are part of the state's broader initiatives for technology growth. And to ensure that life science companies can more easily identify available resources, ESD recently joined forces with NewYork-BIO and the New York City Economic Development Corporation to launch a statewide digital hub for the life science industry. New York Bio Connect is a central resource for funding resources, careers, facilities and industry events. We continue to work closely with NewYorkBIO, and other partners to advance these goals.

Beyond the R&D tax credit, are there other state-level programmes you consider particularly successful in supporting the sector?

Beyond the R&D tax credit, another particularly successful initiative is the return of New York's SBIR/STTR Matching Grant Program, now known as the NYS Innovation Matching Grant (IMG). The programme is entering its second year, with four completed rounds fully subscribed — a clear sign of strong demand and impact across the state's innovation community. It is an excellent initiative

because we are not analysing the science—that is not our area of expertise. We are following what the federal government is providing grants for, adding local money to help companies, whilst also encouraging them to stay and build in New York State. It was a valuable idea when we first implemented it years ago, and it remains a crucial piece of the puzzle today.

Can you tell us about the initiative's planned infrastructure projects, particularly those related to cell and gene therapy?

The NYS BioGenesis Park, a cell and gene therapy (CGT) innovation hub to be located on Long Island, just across the New York City border, is the largest project being developed by the Life Science Initiative. This hub complements the significant CGT investment at Roswell Park in Western New York, which has completed construction of a certified CGT manufacturing facility and is already home to numerous cancer research trials. The Long Island location is a new facility, being built from the ground up. Our strategy is to create a comprehensive hub that brings together cell and gene therapy companies, contract manufacturing operations, testing labs, a vivarium and public and private investment.

It's a strong concept on paper, and we're now focused on bringing it to life. The response so far has been very positive. While cell and gene therapy remains a relatively new field — with ongoing challenges of access and reimbursement — we've conducted extensive research to ensure this initiative is both sound and sustainable. We already have committed partners. Northwell Health is providing the land — and will occupy a portion of the Hub — and we have brought in the Albanese Organization as the real estate developer. They will build out the space and help identify resources and other companies that should be located there. As a public-private partnership, this large-scale investment is not solely state or private money. These partnerships will make the difference and create a destination where the world can look for future cell and gene therapy opportunities.

What advantages does New York bring to the table in positioning itself as a hub for cell and gene therapies?

Cell and gene therapy represents the next frontier in therapeutics, and there is tremendous excitement around it. While other states and cities, including Philadelphia, are also building strong cell and gene therapy presences, what further strengthens New York's position is the scale of public commitment and the maturity of its ecosystem. The USD 620 million Life Science Initiative

Fund includes: USD 320 million in grants and investment capital; USD 100 million in refundable R&D tax credits; another USD 100 million in Excelsior Jobs Program incentives; and an additional USD 100 million expected through public–private partnerships.

New York now leads the nation in bioscience-related venture capital investment at USD 2.6 billion generated in 2022. The state ranks first in R&D spending by publicly traded companies and has more than 100,000 biopharma jobs across over 5,000 companies. Our goals in this emerging field of cell and gene therapy are not just hopeful ambitions. New York State is a fully mobilised ecosystem with the capital, workforce, and industrial base to support cell and gene therapy at scale. Long Island is an excellent place to live and work. You cannot build or create anything without a workforce, so having an educated workforce, strong schools and universities, and quality of life is essential —and Long Island is excellent on all fronts.

Beyond that, the diversity of the patient population makes Long Island an ideal location for clinical trials and all the other aspects that accompany personalised medicine and specialised science. Because the science and technology in this field are changing rapidly, it will be important to identify an anchor tenant, as they will likely identify needs we have not yet considered. Collaborating with private industry is crucial so that we can deliver exactly what the industry needs rather than speculating and acting on our own. We are excited to get involved in building this ecosystem together.

Looking ahead, are there any remaining gaps or unmet needs that must be addressed to elevate New York further as a leading life sciences hub?

Honestly, as we spent the first five years of the Life Science Initiative filling in critical gaps, New York is in a very positive position. When you look at New York City, at key clusters across the state, and at the surrounding tri-state area — and consider the population density, the workforce, the educational institutions, the hospitals, the labs, and the patient population — much of this represents a natural progression for New York State’s continued growth. I feel this is something we do not have to convince people of—they are already aware of it.

For example, a new subway stop was added in Long Island City, Queens, as part of a downtown revitalisation initiative that created a transit-friendly hub and environment for easier commutes. You can now access the Long Island Railroad, and the PATH train, connecting to Manhattan and New Jersey from Long Island City, Queens. Having that transportation hub has enabled numerous opportunities for mixed-use development.

How does New York engage with the international community, and what is your approach to foreign direct investment?

Empire State Development has dedicated staff who focus on foreign direct investment, looking for requests for information, requests for proposals, and identifying companies that are growing. Beyond that, we have contracted ESD representatives in 15 different countries, including the UK and throughout Europe. These are boots on the ground who understand their local environments and the companies growing there, and they can really delve into different sectors, projects of interest, and understand what needs to be.

Many European companies consider the East Coast of the United States as the next logical step in internationalisation. Companies typically start by establishing one East Coast office to understand the ecosystem and then follow by sending people over to conduct R&D as the next step. New York State's proximity to infrastructure, particularly transportation and international airports, is a significant competitive advantage.

Canada is also a great partner for New York State because we share a border, which facilitates the sharing of innovation, workforce, and resources. We also have a Global New York division at Empire State Development that is focused on finding global customers and export markets for New York small businesses. Global NY leads trade missions and supports company attendance at trade shows and has attended Arab Health for about three years now. New York State assembles a pavilion where we build out exhibition space for companies and where they can meet buyers.

Having the ability to help New Yorkers find new customers overseas and bring new money into the state and the country is a game-changer. Simply circulating New York resources around the state is only one part of building an ecosystem, so we also strive to bring in outside capital and stakeholders to further contribute to the industry.

Looking ahead to 2030, what are the ESD's priorities and vision for New York's life sciences ecosystem?

One of our primary goals is to use the programmes we have discussed to strengthen our innovation pipeline and continue building our workforce. Without the proper talent, you cannot succeed. The State University of New York (SUNY) and City University of New York (CUNY) systems, along with private schools and hospitals, make a tremendous difference. We will continue to invest in them,

collaborate with them, and find ways to connect researchers, companies, and venture capital.ESD also has a venture capital arm.

While we are not the first money in and don't act as the lead investor, when companies are looking for funding, the state can get involved. Similar to our SBIR/STTR match, we are not testing their science, but rather following established investors as appropriate. This additional resource is particularly important now, given the tightening in life sciences and biotech funding. That money now has an interest rate, so being part of that process to help companies and take some risk away from larger-scale venture capitalists is a valuable role for the state to play. The overarching concept is continued collaboration with the rest of the ecosystem and finding ways to advance research and business.

What is your final message to companies considering New York State as a life science destination, both nationally and internationally?

Simply talk to us.

When we heard from industry that there was not enough lab space for companies to grow, New York City and New York State partnered with the Alexandria Real Estate Equities (ARE) developer to bring labs into the region. In 2010, the first tower was open; in 2014, the second tower opened. Today, there is over 1 million square feet of available wet lab space in NYC. Had we not encouraged that investment years ago, perhaps this would not be a growing hub now.

Maintaining that connection with the community and finding out what is needed is essential to our role in supporting the development of life sciences. We are not going to wave a magic wand, but we will see what we can do to respond to needs and be helpful in the overall ecosystem.

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