NEW YORK STATE OF OPPORTUNITY.

Empire State Development

2024 ANNUAL REPORT

Empire State Development Division of Science, Technology & Innovation (NYSTAR)

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INTRODUCTION

Empire State Development (ESD) is New York's chief economic development agency. The mission of ESD is to promote a vigorous and growing economy, encourage the creation of new job and economic opportunities, increase revenues to the State and its municipalities, and achieve stable and diversified local economies. Through the use of loans, grants, tax credits and other forms of financial assistance, ESD strives to encourage private business investment and growth to spur job creation and support prosperous communities across New York State.

ESD's Division of Small Business & Technology Development (SBTD) supports the growth of small businesses, generally defined as firms with 100 or fewer employees, providing and implementing programs and services that facilitate access to capital, technical assistance, technology assistance, and venture funding.

ESD's Division of Science, Technology & Innovation (NYSTAR), within SBTD, is tasked with advancing technology innovation and commercialization in New York State. NYSTAR plays an integral role in ESD's economic development strategy through both state and federally funded programs, impacting the overall economic resiliency of the state as well as individual companies, jobs, academic institutions, and communities. This report covers the period of January 2022 through June 2023.

Through state funding, NYSTAR oversees funding for university research centers and provides assistance to businesses through NYSTAR's Centers of Excellence, Centers for Advanced Technology, Innovation Hot Spots, New York State Certified Business Incubators, Science + Technology Law Center, and other assets. This $80+ million portfolio of state-supported high-tech assets touches all points of the state's innovation economy, including but not limited to advanced materials, biotech and life sciences, renewable and clean energy, nanotechnology, semiconductors, optics and imaging, software and artificial intelligence, and electronics technologies.

On the federal level, NYSTAR was competitively designated by the National Institute of Standards and Technology (NIST) Manufacturing Extension Partnership (MEP) as New York MEP (NYMEP). Through this designation, NYSTAR supports 11 centers, with approximately $10 million annually in federal and state funding, that assist manufacturers.

NYSTAR plays four key roles in supporting innovation ecosystem in New York State:

1. Administering programs to ensure they are delivering established goals and purpose;
2. Encouraging collaboration to accelerate technology and company growth;
3. Creating new initiatives to further support innovation and fill gaps in available company assistance; and
4. Attracting additional federal and other funding into New York State by providing matching grants, assisting with consortium-building, highlighting companies seeking investments and occasionally applying directly for federal funds.

Thanks in part to the efforts of NYSTAR and its partners, New York State ranks highly for most measures of science and engineering strength, the strongest indicators of research and innovation, according to the NSF's Science and Engineering State Profiles.

In addition to this Annual Report, NYSTAR releases reports for three individual programs periodically throughout the year. NYSTAR will be publishing separately issued reports for the following programs:

- Centers for Advanced Technology (CAT) (covering 2022-2023 contract years)
- Centers of Excellence (COE) (covering 2022-2023 contract years)
- Manufacturing Extension Partnership (MEP) (covering 2023)

This report covers NYSTAR's remaining programs, initiatives, and updates not covered in these reports. Information in this report includes: Federal Awards; Requests for Proposals (competitions); Innovation Hot Spots & Certified Business Incubators Program; Matching Grants Leverage Program; Science + Technology Law Center; and the new Innovation Matching Grants Program.

FEDERAL AWARDS

One of NYSTAR's priorities is attracting federal funding into New York either directly through the division or funded centers and partners. Below is a summary of nearly $8.5 million in federal funding awarded during the timeframe covered in this report.

NIST MEP

During this period, NYSTAR continued work under its MEP designation by NIST MEP. This is the second, five-year contract under a 10-year designation, funded at $6,877,960 annually by NIST MEP and $3,773,000 in state funding. As NYMEP, NYSTAR supports a network of 11 organizations that provide growth and innovation services to small and mid-sized manufacturers in every corner of the state to help them create and retain jobs, increase profits, and improve efficiency (NYSTAR issued a separate report covering the NY MEP program impacts for the 2022 contract year). NYSTAR has held this designation for over twenty years. The current designation runs through 2025.

Department of Defense (DoD)

NYSTAR was awarded a $450,000 Modernization Grant by the DoD, Office of Local Defense Community. Under this initiative, FuzeHub, the statewide designated MEP center, identified, engaged, and partnered with appropriate NYSTAR centers and partners to provide modernization services to 12 or more defense companies across six different regions. This initiative focused on New York counties with the highest DoD spending, which include Tioga, Jefferson, Oneida, Orange, Niagara and Schenectady, all of which are DoD-dependent areas. This one-year grant ran from August 1, 2022, through July 31, 2023.

NYSTAR was awarded a $5,000,000 Defense Manufacturing Communities Support Program grant by the DoD, Office of Local Defense Community Cooperation. Under this initiative, The UpState Defense consortium (composed of Fuzehub, Centerstate CEO, Griffiss Institute and Syracuse University) will leverage its resources to accelerate the impact of the region's rich microelectronics history by better aligning and enhancing critical economic and social components. The goal is to build stronger, intra-regional supply chains and leading-edge innovation and technology transfer via defense incubation, acceleration and startup programming, and to

fortify the industry's lifeblood – talent – with key STEM educational and talent skill-building opportunities. This five-year grant will run from September 1, 2023 through August 31, 2028.

EDA Studies

New York State (NYS) was awarded a $1 million Statewide Planning Grant from the U.S. Economic Development Administration (EDA) in 2021. The grant was used by ESD to study Advanced Industry Clusters in the state. Through this funding, NYSTAR released RFPs and selected three organizations to perform four studies providing current, market-grounded information about New York State's strengths and opportunities for expanding its advanced industry clusters and generating long-term follow-on economic growth. These studies were finalized on March 31, 2024.

The four studies were:

- **$275,000 for "Advanced Industry Clusters" Study:** This study mapped and analyzed high-value, high-multiplier industry clusters across the State of New York to identify actions for high-impact cluster-based economic development activities for the state and individual regions. MRB Group was selected for this study.
- **$340,000 for "Supply Chain Analysis" Study:** This study examined statewide supply chain and logistics assessment to identify high-impact activities for increased efficiencies and supply chain infill. MRB Group was selected for this study.
- **$110,000 for "Top Ten Emerging Technology Fields" Study:** This study identified top ten emerging technology fields for which New York State is well-positioned to advance an area of global leadership and generate related economic growth. Newmark Economic Development Consulting was selected for this study.
- **$75,000 "Semiconductor" Study**: This study highlighted innovation ecosystem investments, site development investments, skills assessments, workforce development programming, and efficient leveraging of future Federal funding. NYS Economic Development Council was selected for this study.

REQUESTS FOR PROPOSALS

NYSTAR issued two competitive RFPs during this reporting period.

Hot Spot and Incubator

In CFA Round 13, NYSTAR held a competition under the Innovation Hot Spots and NYS Certified Business Incubators programs (see further information below) with awardees receiving a five-year designation that includes operating (working capital) funding from NYSTAR. Eight incubators were designated and were included in this competition.

The chart below lists all awardees, their region, and funding level.

Region	Designation	Applicant	Funding
Capital Region	Incubator	Albany College of Pharmacy	$125,000
Central NY	Incubator	Hamilton Partnership	$125,000
Long Island	Incubator	Hofstra IdeaHub	$125,000
	Incubator	NY IT	$125,000
Southern Tier	Incubator	REV Ithaca	$125,000
	Incubator	Incubator Works	$125,000
Mohawk Valley	Incubator	CADE	$125,000
New York City	Incubator	Staten Island Tech	$125,000

Fashion Innovation Center

NYSTAR is spearheading the creation of a consortium-led Fashion Innovation Center ("FIC") to encourage investments in New York State's agricultural industry and bolster demand for plant and animal fibers by promoting the creation, utilization, and production of New York-grown and made materials to be used and marketed by the textile and fashion industries. NYSTAR issued an RFP and selected an RPI-led consortium, including the Hudson Valley Textile Project, SUNY Morrisville, the Fashion Institue of Technology, and Made X Hudson as partners. The Fashion Innovation Center will focus on nurturing a sustainable fashion industry in the state, with two primary responsibilities:

- Create and operate a Sustainable Fashion Innovation Center Accelerator.
- Generate substantial opportunities for farmers and local businesses to participate in projects that will boost demand for New York's agricultural products.

At the time of this report the consortium went under contract and activities are at early stages.

INNOVATION HOT SPOTS & NYS CERTIFIED BUSINESS INCUBATORS

The New York State Certified Business Incubator and Innovation Hot Spot Program provides financial support for certified incubators in the state to expand their services and reach a greater number of early-stage companies. These competitive designations are for five years. The support offered at individual designees varies, but generally include the following: physical space, shared administrative staff, access to capital, coaching, mentoring, networking connections, prototype development, and access to other technical services. In addition, Innovation Hot Spots are charged with coordinating regional entrepreneurial ecosystems and can offer certain tax benefits to client businesses. Newly designated incubators (as highlighted in the above Requests for Proposals section) are not included below as they have not completed a full year of operations. Additionally, impacts are gathered after assistance and there is a delay in realizing generated impacts and gathering data.

*Total Non-job impacts includes the following metrics: Increased Revenues; Investments Obtained; Cost Savings; Grants Received; Capital Improvements

Below are detailed impacts from contract years 2022-2023.

Region	Type	Hot Spot/Incubator aggregate impacts 2022-23 contract year	Funding Level	Total New Jobs	Total Retained Jobs	Total Non-job impact
Capital	Hot Spot	Innovate 518 (HS)	$250,000	4.0	0.0	$689,716
Capital	Incubator	Albany Medical College BACC	$125,000	0.0	16.2	$800,000
Capital	Incubator	Tech Valley Center of Gravity	$125,000	2.0	3.0	$1,105,734
Central NY	Hot Spot	TechGarden at Centerstate (HS)	$250,000	21.0	63.0	$11,842,932
Central NY	Incubator	Hamilton Partnership	$125,000	4.0	5.0	$144,094
Central NY	Incubator	SUNY Binghamton	$125,000	0.0	280.0	$54,327,017
Central NY	Incubator	Upstate Medical	$125,000	53.8	33.0	$38,787,548
Finger Lakes	Hot Spot	NextCorp (HS)	$250,000	11.0	10.0	$2,765,466
Finger Lakes	Incubator	Cornell REV	$125,000	100.0	0.0	$44,832,002
Finger Lakes	Incubator	Cornell Food & Ag	$125,000	0.0	0.0	$156,644
Long Island	Hot Spot	SBU LIHTI (HS)	$250,000	10.0	10.0	$13,268,092
Long Island	Incubator	Hofstra University - IdeaHub	$125,000	21.0	30.0	$9,149,239
Mid-Hudson	Hot Spot	BioInc @ NYMC (HS)**	$250,000	0.0	0.0	$0
Mohawk Valley	Hot Spot	MVCC ThinCubator (HS)	$250,000	2.0	3.0	$168,320
Mohawk Valley	Incubator	Griffiss	$125,000	6.0	8.0	$529,000
Mohawk Valley	Incubator	SUNY Cobleskill	$125,000	3.0	14.8	$815,500
New York City	Hot Spot	CUNY NYCRIN (HS)	$250,000	11.0	12.0	$12,961,018
New York City	Incubator	Downstate Tech Center	$125,000	172.5	295.5	$131,483,478
New York City	Incubator	LaGuardia - NYDesigns	$125,000	39.0	104.0	$10,637,739
New York City	Incubator	NYU FutureLabs	$125,000	142.0	0.0	$16,462,993
New York City	Incubator	QEDC	$125,000	17.0	16.0	$2,282,573
New York City	Incubator	Mt. Sinai	$125,000	14.0	26.0	$8,923,000
New York City	Incubator	Communitas America	$125,000	18.0	0.0	$986,714
North Country	Hot Spot	Clarkson Shipley (HS)	$250,000	4.0	0.0	$1,878,243
Southern Tier	Hot Spot	Cornell So Tier SA (HS)	$250,000	200.0	0.0	$62,033,446
Southern Tier	Incubator	IncubatorWorks - Souther Tier	$125,000	21.3	17.6	$6,489,522
Western	Hot Spot	Buffalo WIN (HS)	$250,000	83.0	39.0	$117,582,064
Western	Incubator	Fredonia	$125,000	13.0	6.0	$833,533
Western	Incubator	InbuatorWorks - Allegany	$125,000	5.1	12.0	$166,200
Totals				**978**	**1004**	**$552,101,827**

*Total Non-job impacts includes the following metrics: Increased Revenues; Investments Obtained; Cost Savings; Grants Received; Capital Improvements

**BioInc @ NYMC (HS) did not submit impacts for this period. Their designation expired 12/31/2022.

MATCHING GRANTS LEVERAGE PROGRAM

NYSTAR reviews and coordinates requests for New York State matching grants and support letters to strengthen applicants' proposals to federal agencies, foundations, and other grant-making organizations. Higher education and not-for-profit research institutions in New York State are eligible to apply for these state matching funds. The purpose of this program is to attract more federal R&D funding to support technology development and commercialization efforts in New York State. A maximum commitment of $1 million is available through this program and requires at least $2 federal per $1 state funding committed. In the period covered by this report, NYSTAR provided matching grant commitments to the following successful federal awardees:

Awardee	NYSTAR Award	Federal Award	Federal Agency	Fiscal Year
Cornell	$500,000	$4,000,000	Department of Energy	FY24
Cornell	$996,204	$10,114,159	National Science Foundation	FY24
University of Albany	$412,500	$825,000	National Science Foundation	FY24
TOTALS	**$1,908,704**	**$14,939,159**		

NYSTAR leveraged this program to support two major federal initiatives, NSF Regional Innovation Engines and EDA Tech Hubs, which was instrumental in securing significant awards:

- Up to $160 million from the NSF for the "Upstate New York Energy Storage Engine," awarded to the New Energy New York consortium headquartered in Binghamton, NY.
- $40 million from the EDA for an implementation grant for the "SMART I-Corridor," spanning Buffalo, Rochester and Syracuse to build out a semiconductor ecosystem including workforce, supply chain and innovation.

INNOVATION MATCHING GRANTS

In May of 2024, NYSTAR launched its new Innovation Matching Grants (IMG) Program (funded in the FY2023 budget), which aims to grow small businesses and support the development of new technologies in New York State by providing matching funds for federal Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) grants.

The New York State Innovation Matching Grants Program will match:

- The award for Phase I applicants, not to exceed $100,000.
- The award for Phase II applicants, not to exceed $200,000.

In no event, shall the funding provided from the IMG Program exceed 50% of the federal award. A funding commitment made through the IMG Program demonstrates New York State support to increase the likelihood of New York State businesses to be awarded competitive federal SBIR/STTR funding, as well as augment the federal awards with funds focused on commercialization of selected proposals. These awards will strongly support the growth of promising small businesses in New York.

As this program launched at the time of this report, there are no impacts yet to report.

SCIENCE + TECHNOLOGY LAW CENTER

NYSTAR is the primary funding source for the New York State Science + Technology Law Center (STLC), housed at Syracuse University College of Law. This organization provides free legal research, education, and information to entrepreneurs and companies to help commercialize new technologies from lab to market. From market landscapes, intellectual property protection, licensing options, and to potential funding sources, STLC has helped scores of companies and institutions make their technology vision become a commercial reality. Syracuse University was awarded a STLC re-designation in a 2017 competition held by NYSTAR for a period extending through March 2023.

Typical STLC clients include start-up and established tech companies, as well as entrepreneurs, with the STLC providing additional services to research centers, technology transfer offices, and incubators. Key areas of service include:

- **Patent landscapes and trademark searches** – STLC's research team performs patent and trademark searches providing valuable information that a client can share with an attorney to provide the groundwork for drafting claims and offering opinions on patentability. STLC also provides more generally applicable informational literature on intellectual property for prospective inventors seeking to be proactive in protecting their IP rights.
- **Regulatory overviews –** STLC provides analysis of both state and federal regulations, as well as industry-specific standards and certifications that are critical to market entry. By providing early and accessible regulatory insight, businesses are better equipped to remain in New York, create jobs, and spur innovation.
- **Market research and segmenting –** Clients receive in-depth analysis into who the customers are in a given market, and for innovations with multiple applications, which markets can offer the most rewards. Examples of previous projects include identifying sell points for a specialized gastroenterology therapy within the EU and the U.S. medical systems, exploring ideal sub-segments of commercial buyers for cutting edge lawn equipment, and primary market research such as surveys to determine what feature sets and price points appeal to various demographics for marketing new speaker technologies.
- **Competitive landscape –** Entrepreneurs and researchers attempting to commercialize new technology rarely know the full scope of their intended market's competition. STLC's competitive landscape analysis provides clients with a breakdown of potential competitors and identifies significant product differentiators, enabling clients to find underserved consumer segments and areas where the prevailing technology is vulnerable to disruption or possible licensing opportunities.

- **Commercialization analysis –** Many inventors and entrepreneurs hold valuable patents but are unclear on how to bring a product to market. STLC conducts market research and advises on potential business models, licensing strategies, or the appropriate distribution/go-to-market strategy. Clients receive analysis of competing business models based on market and team factors, promoting the development of an informed strategy.

The STLC at Syracuse University College of Law has continued its intellectual property, regulatory, and market proprietary research reports for developers of new technologies in NYS. The research is key to assessing those technologies with the best prospects for commercialization. Recipients include NYSTAR-funded research centers, tech transfer offices, and startups. During the 2022-2023 period, the STLC produced over 100 research reports for NYS research centers and companies commercializing new technologies. The reports included research on prior art/patent landscapes, market research, and regulatory overviews. The STLC also provides education, information, and outreach through participation in I-Corps, FuzeHub Solutions Forums, conferences, sponsorships, publication of guidebooks, and a website listing New York State patent agents and patent law firms by region, and a monthly newsletter.

IMPACTS METHODOLOGY

The impacts reported above are defined as:
"New jobs" refers to permanent, full-time positions created in the course of business expansion resulting from the NYSTAR's program efforts.

"Retained jobs" are those that may be at risk when companies consider reducing staff or relocation because of high operating costs, incentives offered by another location, or production contractions. If a company credibly substantiates that jobs were at risk and that the collaboration with a NYSTAR-supported center was a significant reason for their retention, such jobs are counted as retained.

"Economic impact" or "non-job impact" includes the following impacts reported by companies served by CATs, COEs, Innovation Hot Spots, Certified Business Incubators, MEPs or other NYSTAR assets. Note that it does not reflect any increase in paid wages or the multiplier effects of these impacts, and therefore understates total cumulative changes in employment, earnings, and output in New York State attributable to the efforts of these programs. Larger reported impacts are subjected to greater scrutiny by NYSTAR and will require additional confirmation by the reporting asset and/or company. NYSTAR follows a threshold formula for determining the necessary level of evaluation.

- **Increased revenues** realized by the company as a result of a company's collaboration with a NYSTAR-supported center. NYSTAR-supported assets frequently collaborate in new product development or existing product improvement that directly increases client revenues. In extraordinary circumstances, NYSTAR may credit impact for retained sales with sufficient documentation that, due to the center's work, the company was able to retain a specific customer that it would have otherwise lost.

- **Cost savings** realized by the company as a result of a company's collaboration with a NYSTAR-supported center, which typically accrue from production process improvements, the value of accessing specialized equipment, expertise, or analytical testing, and other production/research savings.
- **Grants Received** by the company. These include any non-New York State sources of funds. They may include non-NYS government funds, for example, federal sources like the Small Business Innovation Research program. They may also include venture capital and other business investments. There must be a demonstration that the NYSTAR-supported center played a substantive role in helping the company obtain the funds.

NYSTAR follows documented economic impact review procedures. For most programs, impacts reported to and credited by NYSTAR meet the following conditions:

- Occurred during the reporting period and not previously credited to that center;
- Actual impact rather than projected;
- Occurred within and benefited a company in New York State;
- Resulted from collaboration with a NYSTAR-funded center; and
- Documented with a company letter of attestation and other substantiating materials as noted above.