



**Division of  
Science, Technology  
& Innovation**

## **2021 Annual Report**

Empire State Development

Division of Science, Technology & Innovation (NYSTAR)

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## Introduction

Empire State Development (ESD)'s Division of Science, Technology and Innovation (NYSTAR), part of the state's economic development agency, is tasked with advancing technology innovation and commercialization in New York State. NYSTAR plays an integral role in ESD's economic development strategy by overseeing funding for university research centers and by providing 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 approximately \$55 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 energy, materials processing, optics and imaging, software and digital media, and electronics technologies.

Additionally, 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 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.

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, New York ranks second in the nation for higher education R&D in science and engineering fields; second for state government R&D expenditures; sixth for federal R&D obligations; and third for the number of utility patents issued to state residents. New York State has made unparalleled investments in world-class technology assets and expertise in order to strengthen its position as a global hub of innovation. Annual state R&D investments of nearly \$450 million are complemented by nearly \$18 billion in annual business R&D.

In addition to this 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 (covering 2019-2020 contract years)
- Centers of Excellence (covering 2019-2020 contract years)
- Manufacturing Extension Partnership (covering 2020)

This report covers NYSTAR's remaining programs, initiatives, and updates not covered in these reports. Information included in this report includes: Requests for Proposals (competitions); federal awards; the Innovation Hot Spots & Certified Business Incubators Program; Matching Grants Leverage Program; Faculty Development Technology Transfer Incentive Programs; Science + Technology Law Center; and a summary of fields of technology with significant potential for the state's economy.

## **Federal Awards**

One of NYSTAR's priority is attracting federal funding into New York either directly through the division or funded centers and partners. Below is a summary of nearly \$39 million in federal funding awarded during the timeframe covered in this report.

### **NIST MEP**

During this period, NYSTAR was designated by NIST to be the New York State center. The designation is for five year and funded at \$6,599,660 annually. 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 2019 contract year.) NYSTAR has held this designation for over twenty years.

### **U.S. Department of Defense's Office of Local Defense Community Cooperation**

In 2020, NYSTAR secured \$990,000 in funding from the U.S. Department of Defense's Office of Local Defense Community Cooperation to assist New York State manufacturers that need to comply with defense cybersecurity standards. Through a competitive process, NYSTAR selected Mohawk Valley Community College Advanced Institute for Manufacturing's completion of four workshops, 24 security assessments, and 13 system security plans to help New York companies gain or maintain their status as eligible defense contractors and secure the supply of critical goods and technologies to the Department of Defense.

### **NIST MEP (MEP Advanced Technology Team)**

NYSTAR, in collaboration with Tennessee (TN) MEP and Washington (WA) MEP, was awarded a proposal by NIST titled the MEP Advanced Technology Team. The grant (\$1 Million over 2 years) provides funding to create MEP national experts in advanced technology that engage all Manufacturing USA Institute technologies to meet small manufacturer's needs. The technical staff is responsible for understanding readiness and applicability of technologies and finding similar technological expertise at local universities and local national laboratories.

Currently, 19 MEP Centers across the country have opted-in to help identify 28 projects of small & medium size manufacturers (SMMs) with a wide range of advanced technology needs. Six of these projects are with New York State companies. And include, additive printing of Tungsten to create micro welding tips; lightweight composites for vertical take-off vehicles; silicon lasers using nano-materials; and many others.

### **NIST MEP (Manufacturing Readiness Program)**

NYSTAR was awarded \$999,000 to fund a Manufacturing Readiness Program that will be led by NextCorps, the Finger Lakes Region Manufacturing Extension Partnership (MEP). The program will support start-ups and contract manufacturers by providing training, education, and operational and programming support to accelerate the time it takes to move from prototype to commercial product. The award runs September 1, 2020 to August 31, 2023.

### **NIST MEP (Emergency Assistance Funding- CARES)**

NYSTAR was awarded \$2.6 million in CARES Act funding, through Manufacturing Extension Partnership Emergency Assistance Program to implement projects that will assist manufacturers in preventing, preparing for, and responding to the COVID-19 pandemic. This award runs May

1, 2020 to September 30, 2021. NYSTAR held a competition and awarded funding to four centers to help manufacturers affected by the pandemic. More information is provided below in the Request for Proposals section.

### *Requests for Proposals*

NYSTAR held four competitions during this reporting period.

#### **Cybersecurity Assistance**

In 2020, NYSTAR was awarded \$990,000 from the Department of Defense Office of Local Defense Community Cooperation to address cyber security concerns in the defense supply chain. Through a competitive process, NYSTAR awarded \$900,000 to Mohawk Valley Community College Advanced Institute for Manufacturing to assist New York State defense supply chain companies in achieving compliance with updated cybersecurity requirements. The award period runs from May 1, 2020 through November 30, 2021.

The award is being used to conduct cybersecurity assessments and implement protocols necessary to meet standards set by the Defense Federal Acquisition Regulation Supplement (DFARS). Cybersecurity assessments and remediation measures help New York State companies maintain and grow their defense-related contracts, enhance competitiveness, create jobs, and contribute to innovation in industries that are critical to U.S. security. This was part of an ongoing NYSTAR commitment to improving New York State companies' ability to protect their data assets from growing cybersecurity threats.

#### **Manufacturing Extension Partnership (MEP) Emergency Assistance**

NYSTAR was awarded \$2.6 million from a NIST MEP Emergency Assistance grant that runs from May 1, 2020 through September 30, 2021. The purpose of the funding is to assist manufacturers affected by the pandemic. NYSTAR held a competition and with this funding made four awards totaling \$2.3 million to the following centers:

- Center for Economic Growth (CEG) – \$800,000 to assist companies statewide with reshoring and rebuilding supply chains. This initiative is focused on skills gaps, cutting production costs, identifying alternative materials for manufacturing inputs, redesigning products, and addressing other barriers to moving production from other countries to New York State.
- ITAC – \$650,000 to assist companies statewide with securing personal protective equipment (PPE) to ensure they can operate safely during the current or future pandemics.
- Manufacturing and Technology Enterprise Center (MTEC) – \$500,000 to conduct virtual assessments of manufacturers across the state to ensure they are operating safely, effectively, and efficiently, and identify ways to assist manufacturers in improving productivity and safety, including through the adoption of new technologies and processes.

- FuzeHub – \$350,000 to develop, deliver, and distribute virtual webinars and workshops to reach as many manufacturers across the state as possible. Training and information sharing will include such topics as emergency preparedness, supply chain utilization during crisis, cybersecurity, and recovery efforts.

**Smart Cities Innovation Partnership**

A pilot program to facilitate the development and integration of emerging technologies into public services, the Smart Cities Innovation Partnership, kicked off in July 2020 designating nine (9) priority projects for technology companies to solve. Each project is spearheaded by an anchor institution, providing expertise and project management. Throughout 2021, each project will leverage new technology to resolve critical municipal issues ranging from the integration of smart water meters into municipal operations, leveraging telehealth, triaging emergency calls, mitigating overcrowded emergency rooms, deploying sensors, to other smart building technology, including remotely monitoring vacant properties. A full list of projects is included here:

Anchor Institution	Municipality	Project Name
The Tech Garden	Glens Falls	Vertical Urban Farming
SUNY Binghamton	City of Jamestown	Advanced Remote Water Meter Monitoring
CUNY & NYU	New York City	Real-time Flood Monitoring
CUNY	New York City	Automated Mobility Counting
NYSTEC	City of Saratoga Springs	Connected Wi-Fi Street Lights
NYSTEC	City of Schenectady	Emergency Medicine Triage
University of Syracuse	City of Syracuse	Vacant Structure Monitoring & Inspection
NUAIR	City of Syracuse	Algae Bloom Monitoring & Treatment
SUNY Stony Brook	Village of Southampton	Environmental Monitoring of Nitrogen Pollution

**Workforce Reimagine**

In response to the workforce crisis brought about by the COVID-19 pandemic, the U.S. Department of Education released a request for proposal seeking programs to retrain displaced workers in the states hit hardest by the pandemic. Led by the NY Department of Labor and NYS Workforce Investment Board, ESD, and fellow grant partners State and City Universities of New York (SUNY & CUNY) and the 10 Regional Economic Development Councils (REDCs) secured over \$18 million in funding to address upskilling and retraining displaced workers across NYS. The award period is for three years, October 1, 2020 through September 30, 2023. ESD secured \$3.2 million of this grant to train and support a new entrepreneurial workforce. ESD awarded \$2,750,500 of this grant through two pathways. The first pathway was to provide grants of up to \$22,000 to each of the Entrepreneur-Assistance Centers (EAC) annually to increase its frequency of entrepreneur training programs. Through the second pathway, NYSTAR competitively awarded grants of up to \$342,000 to four designated Reimagine Workforce Centers (RWCs) to provide entrepreneur training and follow-up support. The RWCs will operate from July 15, 2021 through August 31, 2023. The four awardees were:

- [NY Designs at LaGuardia Community College](#)
- [New York University Tandon Future Labs](#)

- [Clarkson University Shipley Center](#)
- [University at Buffalo Western New York Incubator Network](#)

THE RWCs and the EACs will train and support up to 3,000 entrepreneurs through general education, master class workshops, mentorship and network support. At the end of this program, our goal is to provide enough training and support to create roughly four hundred new businesses.

## Events

### Invest NY Series

NYSTAR has partnered with Upstate Capital to host a series of pitch events that are high quality opportunities for investor to connect with startups and companies. Each pitch event is focused on a specific industry and gives early stage companies an opportunity to pitch to investors from all over the world. Additionally, these pitch events will highlight NYSTAR (and its network of resources) to build awareness of expertise and assistance available to companies and investors. Listed below are five events have been held so far, with more planned in the future:

Investment NY Series NYSTAR & Upstate Capital	10/22/2020	1/28/2021	3/25/2021	6/10/2021	7/8/2021
	Energy & Transportation	Health & Wellbeing	Industry 4.0	Future of Food	Aerospace & Defense (Virtual and Live Event)
Attendees	68	81	104	121	133
Startups Pitched	17	21	14	18	15
Investors Participated	13	17	33	69	30
Out of State investors	unkn	unkn	unkn	30	12
Follow on meetings	20	32	66	96	193
Investment Discussion Ongoing*	0	2	1	2	TBD
Investments Made**	1	1	TBD	1	TBD
Investment Amount***	\$2,000,000	\$50,000	TBD	\$50,000	TBD

\*Investment Discussion Ongoing includes the number of companies having active discussions with one or more potential investor

\*\*Investments Made is investments a company received by one or more investors

\*\*\*Investment Amount is the total amount invested.

### Sales for Startups pilot program

In partnership with Cornell University, this IRC-supported program provided sales training to seven (7) early-stage tech companies. Feedback from the companies have indicated that implemented learnings from training program has positively impacted customer relationships.

Companies that participated are more confident selling their products and services, and indicate that the program will be responsible, in part, for new revenue.

**Built by Women**

NYSTAR and NY Ventures are collaborating to cohost an exciting web-series *Built by Women: Frank Conversations with Women Founders and Funders*, a forum that amplifies the voices of women entrepreneurs and investors to cultivate a more diverse ecosystem. The first two events featured Tiffany Dufu (Founder, The Cru) & Jenny Fielding (Founder/General Partner, The Fund) and Liz Tsai (CEO/Founder, HiOperator) & Colleen Heidinger (President, 43North).

***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.

In the 2018-2019 contract year, this program resulted in the creation of 1,258.8 jobs, the retention of 714 jobs, and over \$339 million in non-job-related economic impact.

## Aggregate Impacts

### Innovation Hot Spots

Region	Center Name	Jobs Created	Jobs Retained	Increased Revenues	Investment Obtained	Cost Savings	Grants Received	Capital Improvements	Total Non-Job Impacts
Capital	Innovate 518 at University at Albany	10.5	0.0	\$2,401,180	\$706,512	\$65,000	\$3,000	\$494,265	\$3,669,957
Central NY	TechGarden at Centerstate CEO	137.5	214.0	\$16,041,088	\$1,665,144	\$109,000	\$7,080,736	\$5,515,681	\$14,370,561
Finger Lakes	NextCorp	16.0	22.0	\$1,914,479	\$3,393,868	\$51,200	\$200,000	\$30,120	\$5,589,667
Long Island	Long Island High Technology Incubator	0	0	\$0	\$0	\$0	\$0	\$0	\$0
Mid-Hudson	BioInc at New York Medical College	2.0	0.0	\$31,850	\$1,260,000	\$184,920	\$0	\$40,000	\$1,516,770
Mohawk Valley	ThinCubator at Mohawk Valley Community College	0.0	0.0	\$202,970	\$0	\$10,550	\$35,000	\$21,000	\$269,520
New York City	NYCRIN at City University of New York	0	0	\$0	\$0	\$0	\$0	\$0	\$0
North Country	Shibley Center at Clarkson University	6.0	0.0	\$11,500	\$100,000	\$0	\$0	\$381,878	\$493,378
Southern Tier	Southern Tier StartUp Alliance at Cornell University	152.5	0.0	\$19,222,450	\$25,943,200	\$170,000	\$846,000	\$8,797,562	\$54,979,212
Western NY	Western NY Incubator Network (WIN) University at Buffalo	386.0	0.0	\$1,914,094	\$43,361,989	\$120,000	\$4,253,927	\$1,796,657	\$51,446,667

## Aggregate Impacts

### NYS Certified Business Incubators

Region	Center Name	Jobs Created	Jobs Retained	Increased Revenues	Investment Obtained	Cost Savings	Grants Received	Capital Improvements	Total Non-Job Impacts
Capital	Biomedical Acceleration & Commercialization Center at Albany Medical College	11.0	28.0	\$2,263,949	\$3,143,000	\$156,250	\$1,587,494	\$294,288	\$7,444,981
Capital	Tech Valley Center of Gravity*	0	0	\$0	\$0	\$0	\$0	\$0	\$0
Central NY	Biotech at Upstate Medical University	27.0	11.0	\$46,500	\$19,295,400	\$235,145	\$942,780	\$68,500	\$20,588,325
Long Island	Stony Brook Incubator at Stony Brook University	14.0	0.0	\$2,686,348	\$3,205,000	\$65,000	\$875,000	\$102,717	\$6,934,065
Mid-Hudson	Accel7 *	0	0	\$0	\$0	\$0	\$0	\$0	\$0
Mohawk Valley	Griffis Institute	25.0	43.0	\$1,053,383	\$0	\$79,269	\$705,000	\$24,650	\$1,862,302
Mohawk Valley	Farm and Food Business Incubator at SUNY Cobleskill	18.0	0.0	\$695,184	\$4,000	\$0	\$395,600	\$0	\$1,094,784
New York City	Brooklyn Biotech (Downstate Medical)	65.0	149.0	\$3,843,153	\$0	\$564,594	\$63,225,362	\$4,300,897	\$71,934,006
New York City	NYDesigns at LaGuardia Community College(CUNY)	77.0	78.0	\$1,736,446	\$2,816,797	\$0	\$55,000	\$0	\$4,608,243
New York City	Ichan School of Medicine at Mount Sinai*	0	0	\$0	\$0	\$0	\$0	\$0	\$0
New York City	New York Institute of Technology*	0	0	\$0	\$0	\$0	\$0	\$0	\$0
New York City	New York University FutureLabs	79.0	115.0	\$4,554,543	\$26,500,000	\$0	\$270,000	\$0	\$31,324,543
New York City	Entrepreneur Space (Queens Economic Development Corporation)	19.0	41.0	\$3,574,868	\$0	\$56,624	\$21,000	\$28,224	\$3,680,716
Southern Tier	REV at Cornell University	82.0	0.0	\$11,068,836	\$28,107,312	\$0	\$1,409,000	\$0	\$40,585,148
Southern Tier	Alfred Technology Resources - IncubatorWorks	3.0	7.0	\$0	\$0	\$0	\$1,148,090	\$335,000	\$1,483,090

Southern Tier	Kaufmann Incubator at Binghamton University	120.3	0	\$4,378,609	\$5,967,082	\$0	\$4,610,763	\$0	\$14,956,454
Western NY	Fredonia Tech Incubator at SUNY Fredonia	8.0	6.0	\$503,461	\$0	\$0	\$2,500	\$142,143	\$648,104
<b>Totals (Hot Spots &amp; Incubators)</b>		<b>1258.8</b>	<b>714.0</b>	<b>\$78,144,890</b>	<b>\$165,469,304</b>	<b>\$1,867,552</b>	<b>\$87,666,252</b>	<b>\$22,373,582</b>	<b>\$339,480,492</b>

*\*impacts were not provided prior to the creation of this report*

### 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.

This program was not active during this reporting period.

### Science + Technology Law Center

NYSTAR is the primary funding source for the New York State Science & Technology Law Center (STLC) and is housed at Syracuse University College of Law. This organization provides 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 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.

In addition to research, STLC has continued its education and outreach efforts through participation in pre-seed workshops, FuzeHub Solutions Forums, conferences and sponsorships, publication of guidebooks, webcasts, listings of New York State patent agents and patent law firms by region, and a monthly *Innovation Review* newsletter. STLC also collaborates with a network of Technology Commercialization Clinics located at research institutions and business schools throughout the state in order to best serve its clients.

### ***Fields of Technology with Significant Potential***

ESD and its Division of Science, Technology & Innovation periodically review industry and technological developments to identify areas of strategic importance.

The below highlighted trends in technology clusters for the foreseeable future was taken from a [2021 McKinsey report](#).

#### **1. Next-level process automation-industrial IoT, robots/cobots**

Self-learning, reconfigurable robots will drive automation of physical processes beyond routine activities to include less predictable ones, leading to fewer people working in these activities and a reconfiguration of the workforce

#### **1A. Process visualization-digital twins, 3D/4D printing**

Advanced simulations and 3D/4D printing will virtualize and dematerialize processes, shortening development cycles as shorter product and service life cycles continue to accelerate, further pressuring profit pools and speeding strategic and operational practices that tightly correlate with successful digital efforts

#### **2. Future of connectivity-5G and IoT connectivity**

With 5G reaching up to 80% of the global population by 2030, enhanced coverage and connection speed across long and short distances will enable new services , business models (e.g. connected services), and next-gen customer experiences (e.g. live VR)

**3. Distributed infrastructure-cloud and edge computing**

Wide availability of IT infrastructure and services through cloud computing could shift demand for on-premise IT infrastructure and reduce the need for IT setup and maintenance, while the democratization of infrastructure will help shift competitive advantage away from IT to software development and talent

**4. Next-generation computing-quantum computing**

High computational capabilities will allow new use cases, such as molecule-level simulation, reducing the empirical expertise and testing needed for a range of applications and leading to the following: disruption across industries such as materials, chemicals, and pharmaceuticals; highly personalized product developments, e.g. in medicine; the ability to break the majority of cryptographic security algorithms, disrupting today's cybersecurity approaches; and the faster diffusion of self-driving vehicles

**5. Applied AI-computer vision, natural-language processing, and speech technology**

As AI matures and continues to scale, it will enable new applications (e.g. more rapid development cycles and detailed customer insights), eliminate labor for repetitive tasks, and support the global reach of highly specialized services and talent (e.g. improved telemedicine)

**6. Future of programming-software 2.0**

Software 2.0 creates new ways of writing software and reduces complexity; however, as companies look to scale their software-development capabilities they will need to master DataOps and MLOps practices and technology to maximize the future of programming

**7. Trust architecture-zero trust security, blockchain**

Trust architectures will help commercial entities and individuals establish trust and conduct business without need for intermediaries, even as zero trust security measures address growing cyberattacks; countries and regulatory bodies may have likely to rethink regulatory oversight; and distributed-ledger technologies will reduce cost and enable transformative business models

**8. Bio Revolution-biomolecules/biosystems, biomachines/biocomputing/augmentation**

Enable rapid analysis of genetic materials and open up possibilities (e.g. for rapid vaccine development, personalized medicine, and gene therapy). Using biological material for computing purposes can enable a vast expansion of data storage using DNA as the information medium

**9. Next-generation materials-nanomaterials, graphene and 2D materials, and molybdenum disulfide nanoparticles**

By changing the economics of a wide range of products and services, next-gen materials may change industry economics and reconfigure companies within them (e.g. by allowing for the integration of sustainable materials and renewable energy sources into processes), even as innovations in material science help create smart materials with programmable properties that respond to stimuli from external factors

## 10. Future of clean technologies-nuclear fusion, smart distribution/metering, battery and battery storage, carbon-neutral energy generation

As clean technologies come down the cost curve, they become increasingly disruptive to traditional business models, creating new business-building opportunities, operational-improvement programs driven by clean technologies, and new climate-change mandates that could alter the balance sheet of carbon-intense sectors-all while providing the green energy needed to sustain exponential technology growth

As NYSTAR identifies technologies of strategic importance, these may be reflected in future competitions to designate new centers; create new initiatives; or direct efforts related to commercialization and innovation.

### *Impacts Methodology*

“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 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 collaboration with the NYSTAR-supported center was a significant reason for their retention, those jobs are counted as retained. That substantiation must include documentation comparing operating costs vis-à-vis another location and specific offers or incentives for relocation.

“Economic impact” or “non-job impact” refers to the following impacts reported by companies served by CATs, COEs, Innovation Hot Spots, and Certified Business Incubators. 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 at times require confirmation from a third party. NYSTAR follows a threshold formula for determining the necessary level of evaluation.

- **Increased revenues:** 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 are 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 research savings. When savings are reported because the center is providing services such as access to equipment, analytical testing, or research expertise that otherwise would have to be done by the company in-house, the credited cost savings is not the total amount the research would have cost the company in-house, but the difference between this cost and the amount contributed by the company.

- **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 current year and not previously credited to that center;
- Actual impact rather than projected;
- Occurred within and benefited a company within 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.