



one north carolina
Small Business Program

**FISCAL YEAR 2015 REPORT ON THE COMMITMENT,
DISBURSEMENT, AND USE OF FUNDS**

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Receiving Entities:

The Joint Legislative Commission on Governmental Operations
The Chairs of the House of Representatives and Senate Finance Committees
The Chairs of the House of Representatives and Senate Appropriations Committees
The Fiscal Research Division of the General Assembly

Submitting Entity:

The Board of Science, Technology & Innovation of the Department of Commerce

BACKGROUND

The federal Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs grant competitive awards to small businesses for Phase I proof-of-principle research and development (R&D) and Phase II early-stage product development.

The SBIR program is a highly competitive, merit-based award system designed to stimulate technological innovation, strengthen the role of small businesses in meeting federal R&D needs, and increase private sector commercialization of innovations derived from federal R&D. Enacted in 1982 as part of the Small Business Innovation Development Act, (and then reauthorized in 2000 and 2012), the SBIR program requires federal agencies with more than \$100 million in extramural R&D to allocate a percentage of their budgets exclusively for small businesses. This set-aside began in 1983 at 0.2% and is currently 2.5%, resulting in the availability of approximately \$2.5 billion in fiscal year 2015 to small businesses R&D.

The STTR program is similar to the SBIR program, but its unique feature is its *requirement* that the small business work jointly with a non-profit research institution. A minimum of 40% of the work must be performed by the small business and a minimum of 30% by the non-profit research institution. Such institutions include federally funded research and development centers (FFRDCs), universities, university-affiliated hospitals, and other non-profits. Established by Title II of the Small Business Research and Development Enhancement Act of 1992, Public Law 102-564, the STTR program requires federal agencies with more than \$1 billion of extramural R&D to reserve 0.3% of their budgets for R&D small businesses and their partners. This set-aside currently results in the availability of approximately \$150 million for fiscal year 2015.

The One North Carolina Small Business Program (hereinafter “the Program”)—the subject of this report—entails two State-funded programs: the **SBIR/STTR Phase I Matching Funds Program** and the **SBIR/STTR Phase I Incentive Funds Program**.¹ North Carolina is among a handful of innovative states that have seen the value of leveraging federal SBIR/STTR funds with State support of this type.

This report provides FY 2015 commitment and disbursement information for only the Matching Funds Program, as overall Program funding has been insufficient to allow for the operation of the Incentive Funds Program since FY 2009. Information for previous fiscal years is available in previously submitted year-end reports for those years.

¹ Descriptions of both programs are provided later in this report, on pages 4 and 11, respectively.

PROGRAM IMPACT

Between FY 2006 and FY 2011, 335 grants, totaling more than \$16.8 million, were issued to North Carolina small businesses.² As measured in a comprehensive evaluation of the Program in 2012, this support has helped the recipient businesses to:

- Develop and commercialize innovative commercial technologies in numerous sectors, including biotechnology, nanotechnology, medical technologies, computer software, military/defense technologies, pharmaceuticals, textiles, and others;
- Build company and university collaborations;
- Attract more than \$85 million in external investments;
- Generate more than \$73 million in follow-on federal SBIR/STTR funding;³
- Increase the follow-on federal funding rate from 49% to 56%, six points above the U.S rate of 50%.
- Create or retain more than 485 high-wage private sector jobs;
- Position themselves to yield hundreds of patents, licenses, and products.

Most of these companies are small and still growing, albeit rapidly. Thus, these impacts will multiply greatly as the grants become fully utilized over time to grow new businesses and enhance existing businesses. The Program was not funded during FY 2012, FY 2013, and FY 2014. Though funding resumed in FY 2015, most of the funded projects are still active, and thus measuring their impact will not be possible until they are complete, likely within the next year.

SAMPLE TESTIMONIALS

"Our program director at the NIH went out of his way to find funding from other institutes for our Phase I SBIR when he learned of the NC matching program, because he "would get more bang for his buck." Without the matching program, the grant would have been delayed to the following year and most likely not funded. The NC matching program definitely makes NC companies more competitive and is an effective tool for bringing federal funds to NC."

~ Brighton Development, LLC, Cary

"In March of 2012, my company will celebrate its 6th full year of business (all of which have been profitable). Although growth has been slow and painful at times, the future of my company is now brighter than ever. This is in no small way due directly to the Matching Funds program. I will always be thankful for the funds from the program and I hope that it is continued to help other small businesses like mine that just need that little bit of help to be successful."

~ GTCAllison, LLC, Mocksville

² This includes 90 incentive grants, totaling \$263,281.43, and 245 Matching grants, totaling \$16,628,228.5. Information grants in previous years is available in previously submitted year-end reports.

³ Combined, the external capital investments and the follow-on federal SBIR/STTR funding represent a nearly 9 to 1 leveraging of the State Matching Funds.

“United Protective Technologies certainly benefited from the receipt of our state matching fund grant. We used the funds as an opportunity to “bridge” funding of R&D on this project between the first phase and follow-on funding. From a long-term perspective, the company remains focused on raising R&D funds for this effort, which translates into jobs and production revenues in Locust, NC. In this scenario, the NC match funding is an investment in job creation and technology on a long-term basis.”

~United Protective Technologies, Locust

MATCHING FUNDS PROGRAM

Overview

The North Carolina SBIR/STTR Phase I Matching Funds Program awards matching funds to North Carolina-based small businesses that have received a federal SBIR or STTR Program Phase I award. The North Carolina Board of Science, Technology & Innovation, a division of the North Carolina Department of Commerce, administers the Program.

Under the Program, awards can be made to eligible businesses for up to 100 percent of a firm's federal Phase I SBIR/STTR Program award, up to a maximum amount of \$100,000, until funds available for the Program have been exhausted. Applicants who receive Matching Awards receive 75 percent of the award amount upon receipt of an SBIR/STTR Phase I award, and receive the remaining 25 percent of the award if their Phase I report is accepted by the funding agency and they submit a related Phase II application to the funding agency. Phase II SBIR/STTR awards can exceed \$1million.

Purpose

The purpose of the Matching Program is to foster job creation and economic development in North Carolina by increasing the competitive position of North Carolina small businesses in attracting SBIR and STTR grant funding, and to provide an incentive for Phase I award-winning firms to participate in the more substantial Phase II program. The goals of the Matching Program are to:

1. Increase the amount of federal research dollars received by North Carolina small businesses;
2. Increase the intensity of the research conducted under Phase I, making North Carolina small businesses more competitive for Phase II funds;
3. Help North Carolina businesses bridge the funding gap period between the final Phase I payment and the first Phase II payment in the federal SBIR/STTR Program; and
4. Encourage the establishment and growth of high-quality, advanced technology firms in the State of North Carolina.

FY 2015 Summary

- In the FY 2015 Budget Act, \$2.5 million was appropriated to One North Carolina Small Business Program. Individual grants were capped at 50 percent of the federal Phase I award, up \$50,000.
- The Program committed all of this funding via 51 grants during FY 2015, and disbursed slightly more than $\frac{3}{4}$ of it during FY 2015. The remaining amount will be disbursed as companies meet milestones in future FYs.

The following table provides information, including amounts committed and disbursed, for the 51 grants awarded during FY 2015.

Organization Legal Name	Project Title	Organization City	Organization County	Total Grant Amount Committed	Committed Fiscal Year	Amount Disbursed in FY 2015
3-C Institute for Social Development, Inc.	Interactive Online Capacity Building for Positive Youth Development	Durham	DURHAM	\$50,000.00	2015	\$37,500.00
Adroit Materials	Developing Epi-ready Gallium Nitride Wafer Surfaces	Cary	WAKE	\$50,000.00	2015	\$37,500.00
Affinergy, LLC	Development of a novel clinical assay for measuring serum hepcidin levels	Research Triangle Park	DURHAM	\$50,000.00	2015	\$37,500.00
Akoustis, Inc.	Single Crystal Group III-Nitride Bulk Acoustic Resonators and Bulk Acoustic Wave Filter Components for Mobile Communications	Cornelius	MECKLENBURG	\$50,000.00	2015	\$37,500.00
AP Solutions, Inc.	Atmospheric Plasma Titanium Surface Preparation for Structural Adhesive Bonding	Cary	WAKE	\$50,000.00	2015	\$37,500.00
Asklepios BioPharmaceutical, Inc.	AAV2-ASPA-Based Metabolic Intervention for Alzheimer's Disease	Chapel Hill	ORANGE	\$50,000.00	2015	\$37,500.00
Baebies, Inc.	Digital Microfluidics - Minimizing blood volume for pediatric coagulation screening	Durham	DURHAM	\$50,000.00	2015	\$37,500.00
BioMarck Pharmaceuticals	A Novel Therapeutic Approach for Acute Lung Injury/ARDS	Durham	DURHAM	\$40,466.00	2015	\$30,349.50
Bioptigen, Inc.	Intrasurgical Optical Coherence Tomography	Durham	DURHAM	\$50,000.00	2015	\$37,500.00
Camras Vision, Inc.	Feasibility of Adjustable Pressure Control within an External Shunt	RTP	DURHAM	\$50,000.00	2015	\$37,500.00
Cell Microsystems	CellRaft Arrays for Single-cell PCR	Chapel Hill	ORANGE	\$50,000.00	2015	\$37,500.00
Corvid Technologies LLC	Advanced Opaque Armor Materials and Manufacturing Methods	Mooresville	IREDELL	\$50,000.00	2015	\$37,500.00
Curl Bio LLC	Identification of Novel Small Molecule AMPK Modulators	Durham	DURHAM	\$50,000.00	2015	\$37,500.00

Organization Legal Name	Project Title	Organization City	Organization County	Total Grant Amount Committed	Committed Fiscal Year	Amount Disbursed in FY 2015
Dignify Therapeutics LLC	Development of a treatment for voiding dysfunction in spinal cord injured patient	Research Triangle Park	DURHAM	\$50,000.00	2015	\$50,000.00
Edison Agrosiences	Enhancing plant genetic transformation by Agrobacterium	Durham	DURHAM	\$45,000.00	2015	\$33,750.00
Eno River Technologies Co., LLC	Ultrafast True Random Number Generation using Hybrid Boolean Networks	Chapel Hill	ORANGE	\$50,000.00	2015	\$37,500.00
EpiCypher, Inc.	Developing Novel Peptide Arrays for Epigenetic Research	Research Triangle Park	DURHAM	\$50,000.00	2015	\$50,000.00
Eppin Pharma Inc	Contraceptive testing for semen availability in male monkeys	Chapel Hill	ORANGE	\$45,000.00	2015	\$33,750.00
GridBridge, Inc.	Isolated Bidirectional DC Converters for Distributed Battery Energy Applications	Raleigh	WAKE	\$50,000.00	2015	\$50,000.00
Health Outcomes, Inc.	Software for Dynamic Behavioral Outcomes PORTAL and Dashboard	Chapel Hill	ORANGE	\$50,000.00	2015	\$37,500.00
HealthSpan Diagnostics, LLC	A biomarker of aging as a predictor of kidney transplant function	Chapel Hill	ORANGE	\$50,000.00	2015	\$37,500.00
Indexus Biomedical LLC	Cell analysis & immunoassay device for distributed HIV diagnosis and monitoring	Morrisville	WAKE	\$50,000.00	2015	\$37,500.00
Innovation Research and Training, Inc.	Web-based Resource for Youth about Clinical Research	Durham	DURHAM	\$50,000.00	2015	\$37,500.00
Integrated Laboratory Systems, Inc. (ILS)	CometChip: Development of a high throughput DNA damage assay in hepatocytes	Research Triangle Park	DURHAM	\$50,000.00	2015	\$50,000.00
Keona Health	Geriatric Symptom Protocols for Improved Triage in Office and Assisted Living	Chapel Hill	ORANGE	\$50,000.00	2015	\$37,500.00
Kepley Biosystems Inc	A new sustainable crustacean bait	Greensboro	GUILFORD	\$50,000.00	2015	\$37,500.00

Organization Legal Name	Project Title	Organization City	Organization County	Total Grant Amount Committed	Committed Fiscal Year	Amount Disbursed in FY 2015
KeraNetics, LLC	Development of Biocompatible Dressings for the Delivery of Analgesics to Burn Wounds	Winston Salem	FORSYTH	\$49,967.35	2015	\$37,475.52
Kyma Technologies, Inc.	Low Power Monolayer MoS2 Transistors for RF Applications	Raleigh	WAKE	\$31,499.94	2015	\$23,624.95
Lumeova, LLC.	Ultra-Wideband Wireless Optical Transceiver	Cary	WAKE	\$50,000.00	2015	\$37,500.00
Mycosynthetix Inc	Fungal Metabolites as Novel Anthelmintics against Soil-Transmitted Helminthes	Hillsborough	ORANGE	\$50,000.00	2015	\$37,500.00
Nirvana Sciences Inc.	New Class of Bright, Sharp, Tunable Red/Far-Red Fluorophores for Flow Cytometry	Cary	WAKE	\$50,000.00	2015	\$37,500.00
Nocturnal Product Development	New generation of catheters for treatment of atrial fibrillation	Cary	WAKE	\$42,000.00	2015	\$31,500.00
NovaTarg Inc	Novel and Selective AMPK Activator for the Treatment of Hepatocellular Carcinoma	Research Triangle Park	DURHAM	\$50,000.00	2015	\$37,500.00
Nuvotronics, LLC	Robust Microfabricated Interconnect Technologies: DC to THz	Durham	DURHAM	\$50,000.00	2015	\$37,500.00
Polarean, Inc.	Enhanced Optical Module to Enable Polarized 129Xe MRI Use in Clinical Trials	Durham	DURHAM	\$50,000.00	2015	\$37,500.00
Prevention Strategies, LLC	Picture Me Fit: Engaging Youth in Community-Based Prevention	Browns Summit	GUILFORD	\$50,000.00	2015	\$37,500.00
Puratec, LLC	An Electronically Activated Antimicrobial Catheter	Raleigh	WAKE	\$46,084.87	2015	\$34,563.65
Qualiber, Inc.	Development of NanoFludarabine for Pediatric Leukemia using LCP Nanotechnology	Durham	DURHAM	\$50,000.00	2015	\$37,500.00
Roundtable Analytics LLC	Data-Driven Decision Support Services for Emergency Department Operations	Durham	DURHAM	\$50,000.00	2015	\$37,500.00

Organization Legal Name	Project Title	Organization City	Organization County	Total Grant Amount Committed	Committed Fiscal Year	Amount Disbursed in FY 2015
Seatox Research Inc.	Development of fluorescence-based receptor binding assays for the detection of the marine neurotoxins saxitoxin and domoic acid	Wilmington	NEW HANOVER	\$50,000.00	2015	\$37,500.00
SonoVol	Development of an ultrasound-optical hybrid modality preclinical imaging tool	Chapel Hill	ORANGE	\$50,000.00	2015	\$37,500.00
Southeast TechInventures, Inc.	F10: A novel therapeutic to treat refractory or relapsed AML	Research Triangle Park	DURHAM	\$50,000.00	2015	\$37,500.00
Syberix, Inc	Improving Chemotherapy Outcomes with Proprietary Molecules Targeting the Human Microbiome	Durham	DURHAM	\$50,000.00	2015	\$37,500.00
ThinkZone LLC	ThinkZone	Jamestown	GUILFORD	\$50,000.00	2015	\$37,500.00
Triangle BioSystems Inc	EXTENSIBLE, WIRELESS, AND IMPLANTABLE NEURAL-INTERFACE MICROSYSTEMS	Durham	DURHAM	\$49,982.37	2015	\$49,982.37
TriboFilm Research, Inc.	Improved Silicone Lubrication to Reduce Sub-Visible Particles in Parenteral Containers	Raleigh	WAKE	\$50,000.00	2015	\$37,500.00
Vadum Inc	Scalable Integrated RF Current Source	Raleigh	WAKE	\$49,999.47	2015	\$49,999.47
Vigilant Cyber Systems, Inc.	Toolkit for Assessing Electromagnetic Disruption Recovery (TAEMDR)	Mount Airy	SURRY	\$50,000.00	2015	\$37,500.00
Wasatch Photonics Inc.	Hand-held advanced functional imager for assessing local tissue oxygenation	Durham	DURHAM	\$50,000.00	2015	\$37,500.00
Xintek Inc.	High resolution 3D dental X-ray imaging system with low dose and low cost	Research Triangle Park	DURHAM	\$50,000.00	2015	\$37,500.00
Zen-Bio, Inc	Development and validation of a human brown adipocyte system	RTP	DURHAM	\$50,000.00	2015	\$37,500.00

Organization Legal Name	Project Title	Organization City	Organization County	Total Grant Amount Committed	Committed Fiscal Year	Amount Disbursed in FY 2015
Total				\$2,500,000		\$1,949,995.46

NOTE: Committed and disbursed amounts in the table above differ because businesses receive 75 percent of the committed grant amount upon award, and the remaining 25 percent after certain Program performance/completion criteria are met. The remaining 25 percent disbursement often occurs in a different fiscal year from the original commitment fiscal year. 7

INCENTIVE FUNDS PROGRAM

Overview

The North Carolina SBIR/STTR Phase I Incentive Funds Program reimburses qualified North Carolina businesses for a portion of the costs incurred in preparing and submitting Phase I proposals for the U.S. Government's SBIR and STTR Programs. Under the Incentive Funds Program, the State issues qualified applicants a grant in the amount equal to 50 percent of their approved Phase I Proposal preparation costs, up to \$3,000. These grants are awarded to qualified applicants on a first-come, first-served basis, up to the limits of available funding. The North Carolina Board of Science and Technology, a division of the North Carolina Department of Commerce, administers the Program.

Purpose

The purpose of the Incentive Program is to foster job creation and economic development in North Carolina by encouraging North Carolina small businesses to compete for federal SBIR and STTR awards. The goal of the Incentive Program is to increase the number of North Carolina applications for federal SBIR and STTR Phase I awards.

FY 2015 Summary

- Overall Program funding was insufficient to allow for the operation of the Incentive Funds Program during FY 2015.

CONCLUSION

A handful of innovative states, including North Carolina, have seen the value of leveraging federal SBIR/STTR funds with State support. North Carolina's entrepreneurial community has enthusiastically heralded the One North Carolina Small Business Program's creation for its impact on growing the state's entrepreneurial economy, and for the fact that it reflects a substantial recognition by lawmakers of the importance of innovation and entrepreneurship to the economic health of the state. As the impact measures above indicate, the Program enables North Carolina's small businesses to generate the kinds of innovation critical for making the state a leader in the global economy.