



**FISCAL YEAR 2012 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 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 2012 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 2012.

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 2012 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 10, respectively.

PROGRAM IMPACT

In the Program's first six years, 335 grants, totaling more than \$16.8 million, have been issued to North Carolina small businesses.² As of August 31, 2012, 168 federal Phase I projects, receiving more than \$12.4 million in State Matching Funds support from the Program, have been completed. This support has helped the recipient businesses to:

- Advance innovative commercial technologies in numerous sectors;
- Build company and university collaborations;
- Make an additional \$16.6 million in internal capital investments;
- Leverage more than \$43.3 million in external capital investments;
- Generate more than \$66 million³ in follow-on federal SBIR/STTR funding;⁴
- Create more than 170 additional 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.

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 for commitments and disbursements in previous years is available in previously submitted year-end reports for those years.

³ Fifty-six percent of the small businesses received Phase II awards. This success rate is at least five percentage points higher than the U.S. average success rate. This higher-than-average level of success is due, in part, to the Matching Funds.

⁴ 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, 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 2012 Summary

- In the FY 2012 Budget Act, no State funds were appropriated to One North Carolina Small Business Program.
- The Program did, however, continue to administer and disburse payments to active grants that were awarded in previous fiscal years.

The following table provides data for all disbursed award amounts during FY 2012 for grants awarded (and for which funds were committed) during previous fiscal years (sorted by Committed Fiscal Year):

Organization Legal Name	Project Title	Organization City	Organization County	Total Grant Amount Committed	Committed Fiscal Year	Amount Disbursed in FY 2012
Plureon Corporation	Cell therapy of diabetes using broad spectrum multipotent stem cells	Winston Salem	FORSYTH	\$100,000.00	2007	\$25,000.00
Algaen Corporation	Developing Innovative Photobioreactor and Extraction Technology For Production Of Biodiesel Feedstock Using Microalgae	Winston-Salem	FORSYTH	\$56,052.67	2009	\$14,013.17
Vortant Technologies, LLC	Self Contained Sensor and Telemetry for Remote Water Quality Monitoring	Weaverville	BUNCOMBE	\$75,000.00	2009	\$18,750.00
Innovation Research and Training, Inc.	Elementary School Mindfulness-Based Substance Use Prevention Program	Durham	DURHAM	\$75,000.00	2009	\$18,750.00
Sirga Advanced Biopharma, Inc.	High Through-Put Screening of Small Molecules to Treat Drug Resistant HIV	Research Triangle Park	DURHAM	\$75,000.00	2009	\$18,750.00
SoyMeds, Inc.	Novel therapy for treating Multiple Sclerosis	Davidson	MECKLENBURG	\$75,000.00	2009	\$18,750.00
Advanced TeleCare, LLC	Enhancing Group Identify May Improve Effectiveness of Diabetes Self-Management Education	Cary	WAKE	\$50,000.00	2010	\$12,500.00
KeraNetics, LLC	Keratin biomaterial-based fluid for trauma resuscitation	Winston Salem	FORSYTH	\$50,000.00	2010	\$12,500.00

QuarTek Corporation	Specially Functionalized Nanomagnetic Particles & Ionic Liquids for Harvesting, Dewatering & Extraction of Lipids & Carbohydrates from Algae	Greensboro	GUILFORD	\$50,000.00	2010	\$12,500.00
Humacyte, Inc.	Novel Manufacturing Processes for Tissue Engineered Vascular Grafts	Durham	DURHAM	\$50,000.00	2010	\$12,500.00
G-Zero Therapeutics, Inc	Organismal Radioprotection Through Pharmacological Quiescence	Chapel Hill	ORANGE	\$50,000.00	2010	\$12,500.00
3-C Institute for Social Development, Inc.	An interactive social tutoring system to improve and measure social goals for students with HFASD	Cary	WAKE	\$30,000.00	2011	\$7,500.00
Advanced Liquid Logic, Inc	An automated microfluidic platform for high-throughput newborn SCID Screening	Research Triangle Park	DURHAM	\$30,000.00	2011	\$22,500.00
Keona Health	Web Triage as a Critical Patient Portal Function: RCT for Safety and Cost-Savings	Chapel Hill	ORANGE	\$30,000.00	2011	\$22,500.00
Vascular Biosciences	INJURY-TARGETED DECORIN FOR SYSTEMIC ANTI-FIBROTIC TREATMENT	Durham	DURHAM	\$30,000.00	2011	\$22,500.00
Forthright Engineering PLLC	Heat Pipe for Ground Source Heat Pump	Raleigh	WAKE	\$30,000.00	2011	\$22,500.00
Health Outcomes, Inc.	Computerized adaptive self-report diagnostic assessment for mental health: the SCID-SR	Chapel Hill	ORANGE	\$30,000.00	2011	\$22,500.00
NanoTechLabs Inc.	Easily Reworkable Thermal Interface Material for Space Applications	Yadkinville	YADKIN	\$30,000.00	2011	\$22,500.00

Impulsonic	Interactive Acoustic Simulation in Urban and Complex Environments	Chapel Hill	ORANGE	\$30,000.00	2011	\$22,500.00
Agile Sciences Inc.	Targeting Oral Biofilms with 2-Aminoimidazole/Triazole Conjugates	Raleigh	WAKE	\$30,000.00	2011	\$7,500.00
Advanced Digital Systems, Inc.	Clinical trials data collection during patient care using a novel technology solution	Durham	DURHAM	\$30,000.00	2011	\$7,500.00
Biographics Inc	Multifunction High Throughput System for Neurophysiology of Behavior.	Winston Salem	FORSYTH	\$30,000.00	2011	\$22,500.00
Novan, Inc.	Time-Released Nitric Oxide for the Treatment of Military Wound Infections	Durham	DURHAM	\$30,000.00	2011	\$7,500.00
OrganiPharm, LLC	Marketing a New Paradigm in Goldenseal Product Standardization	Candler	BUNCOMBE	\$30,000.00	2011	\$22,500.00
Vadum Inc	"Multi-shot EOD Disruptor for Robotic Applications	Raleigh	WAKE	\$30,000.00	2011	\$7,500.00
Precision BioSciences	Genetic Engineering of Cell Lines for Bioproduction	Durham	DURHAM	\$30,000.00	2011	\$7,500.00
KeraNetics, LLC	Spatiotemporally Controlled Keratin Biomaterial Delivery System for Functional Tissue	Winston Salem	FORSYTH	\$30,000.00	2011	\$7,500.00
CivaTech Oncology Inc.	Unidirectional 2-dimensional Brachytherapy	Research Triangle Park	DURHAM	\$30,000.00	2011	\$7,500.00

BioMedomics, Inc.	Nanotube Based Lateral Flow Nanosensing Platform for Highly Sensitive Cancer Detection	Research Triangle Park	DURHAM	\$30,000.00	2011	\$7,500.00
Signal Innovations Group, Inc.	Performance Prediction of Feature Aided Trackers using Persistent Sensors	Durham	DURHAM	\$30,000.00	2011	\$7,500.00
STRAD Corporation	Simultaneous Tracking and Ionospheric Model Estimation for NGOTHR	Chapel Hill	ORANGE	\$30,000.00	2011	\$7,500.00
Clinical Tools, Inc	Improving Obesity Outcomes through Interactive Web-Based Clinical Skills Training	Chapel Hill	ORANGE	\$30,000.00	2011	\$7,500.00
Impulsonic	Interactive Acoustic Simulation in Urban and Complex Environments	Chapel Hill	ORANGE	\$30,000.00	2011	\$7,500.00
Algaen Corporation	Bioremediation of Animal Wastewater Using Oil-Rich Microalgae	Winston-Salem	FORSYTH	\$30,000.00	2011	\$7,500.00
Affinergy, LLC	Development of an adipose-derived stem cell isolation matrix	Research Triangle Park	DURHAM	\$30,000.00	2011	\$7,500.00
Galaxy Diagnostics, Inc.	Optimized Growth Media to Detect Intracellular Bacteria Implicated in Chronic Disease	Research Triangle Park	DURHAM	\$30,000.00	2011	\$7,500.00
Total				\$1,456,052.67		\$499,013.17

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.

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 2012 Summary

- Overall Program funding was insufficient to allow for the operation of the Incentive Funds Program during FY 2012.

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.