one north carolina
Small Business Program

FISCAL YEAR 2016 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 2016 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 2016.

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 2016 commitment and disbursement information for only the Matching Funds Program, as funds have not been appropriated 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.

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[1] Descriptions of both programs are provided later in this report, on pages 4 and 10, 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 2016 Summary

- In the FY 2016 Budget Act, $2.25 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 $1,954,003.83 of this funding via 40 grants during FY 2016, and disbursed slightly more than ¾ of it during FY 2016.[4] The remaining amount will be disbursed as companies meet milestones in future FYs. The uncommitted funding ($295,997) was carried forward to be used in the FY 2017 solicitation.

The following table provides information, including amounts committed and disbursed, for the 40 grants awarded during FY 2016.

[4] The following two factors explain why not all the FY 2016 Program funding was committed: (1) because the State budget was not certified until November 2015, the One NC Small Business Program was not able to offer grants until five months into the start of the fiscal year, and (2) the federal SBIR/STTR grants that the ONCSBP matches were awarded at a slower-than-normal rate during the last year. These factors will not be present during FY 2017.

Organization Legal Name	Project Title	Organization City	Organization County	Total Grant Amount Committed	Committed Fiscal Year	Amount Disbursed in FY 2016
BioKier, Inc.	Development of an oral therapeutic to mimic the anti-diabetic effects of gastric bypass surgery	Chapel Hill	ORANGE	$50,000.00	2016	$37,500.00
Biofluidica, Inc.	CTC Screening Assay to Address Health Disparities in Women with Ovarian Cancer	Chapel Hill	ORANGE	$50,000.00	2016	$37,500.00
CELLF-BIO LLC	Implantation of Bioengineered Intrinsically Innervated Internal Anal Sphincter (BioSphincter) to Treat Fecal Incontinence	Winston Salem	FORSYTH	$50,000.00	2016	$37,500.00
EpiCypher, Inc.	Barcoded nucleosomes for analyzing combinatorial epigenetic regulators	Durham	DURHAM	$50,000.00	2016	$37,500.00
GridBridge, Inc.	Gallium Nitride (GaN) Bi-Directional Battery Isolator Unit	Raleigh	WAKE	$49,994.89	2016	$37,496.17
HealthSpan Diagnostics, LLC	Development of biomarker of aging as predictor of AKI due to cardiac surgery	Durham	DURHAM	$50,000.00	2016	$37,500.00
Cytex Therapeutics, Inc.	Unicondylar Resurfacing in an Ovine Osteoarthritis Disease Model	Durham	DURHAM	$50,000.00	2016	$37,500.00
Clinical Sensors, Inc	Nitric Oxide Microfluidic Sensor	Durham	DURHAM	$50,000.00	2016	$37,500.00
Redbud Labs	HLS-Rugged point-of-care device for global hemostasis testing of whole blood	Chapel Hill	ORANGE	$50,000.00	2016	$37,500.00
Reveris Therapeutics, LLC	Developing therapeutic inhibitors of CIB1 for breast cancer	Chapel Hill	ORANGE	$50,000.00	2016	$37,500.00
Initos Pharmaceuticals	Development of Small Molecules that Enhance the Delivery and the Pharmacological Effects of Oligonucleotides	Greenville	PITT	$50,000.00	2016	$37,500.00
Blue Ridge Research and Consulting, LLC	Correlating Tactical Jet Noise Characteristics with Community Annoyance	Asheville	BUNCOMBE	$50,000.00	2016	$37,500.00

Organization Legal Name	Project Title	Organization City	Organization County	Total Grant Amount Committed	Committed Fiscal Year	Amount Disbursed in FY 2016
Agile Sciences Inc.	Small molecule antibiotic potentiators for drug-resistant bacteria	Raleigh	WAKE	$50,000.00	2016	$37,500.00
Cloud Solutions LLC	SBIR Phase I: Providing Automatic Anomaly Prediction and Diagnosis Software as a Service for Cloud Infrastructures	Cary	WAKE	$50,000.00	2016	$37,500.00
Symberix, Inc	Microbiome Targeted Drugs to Improve NSAID Outcomes	Durham	DURHAM	$50,000.00	2016	$50,000.00
SYSTAP, LLC	a Domain specific language for graphs with Accelerated Scala using Linear algebra	Greensboro	GUILFORD	$49,916.00	2016	$37,437.00
Path BioAnalytics, Inc.	Human nasal epithelial organoids as a non-invasive, personalized model for predicting effectiveness of CFTR modulators in cystic fibrosis patients	Chapel Hill	ORANGE	$50,000.00	2016	$37,500.00
Clairvoyant Technology, LLC	"SBIR Phase I: Polar Transmitter for Ultra High Frequency Radio Identification Readers."	Durham	DURHAM	$50,000.00	2016	$37,500.00
Sindre Metals, Inc.	STTR Phase I: Additive manufacturing processes for iron based amorphous metal components	Raleigh	WAKE	$50,000.00	2016	$37,500.00
Enzerna Biosciences. LLC	Novel tools for site-specific ablation of the mitochondrial genome	Greenville	PITT	$50,000.00	2016	$37,500.00
SciKon Innovation, Inc.	Low Cost Microphysiological System for Improved Pharmacodynamics	Chapel Hill	ORANGE	$50,000.00	2016	$37,500.00
Mycosynthetix Inc	Fungal Metabolites Fuel Drug Discovery for Pathogenic Free-Living Amoebae	Hillsborough	ORANGE	$50,000.00	2016	$37,500.00
Mucommune, LLC	Delivery of pathogen-trapping antibodies for vaginal protection	Carrboro	ORANGE	$50,000.00	2016	$37,500.00
Nuvotronics, Inc.	Kilowatt K-band SSPA	Durham	DURHAM	$49,935.00	2016	$37,451.25

Organization Legal Name	Project Title	Organization City	Organization County	Total Grant Amount Committed	Committed Fiscal Year	Amount Disbursed in FY 2016
Brighton Development, LLC	Novel Low Temperature Sterilization Method for Flexible Endoscopes	Cary	WAKE	$50,000.00	2016	$37,500.00
Capture Pharmaceutical Inc	Orally Bioavailable Gadolinium Chelators for Preventing and Ameliorating Toxicity Due to MRI Contrast Agents	Chapel Hill	ORANGE	$50,000.00	2016	$37,500.00
Windlift	Ultra-Lightweight Expeditionary Power System (U-LEPS)	Raleigh	WAKE	$40,000.00	2016	$30,000.00
Vigilant Cyber Systems, Inc.	Vigilant Warrior Health Avatar System	Mount Airy	SURRY	$50,000.00	2016	$0.00
IngateyGen LLC	Development of An Allergen-Reduced Peanut For Commercialization	Elizabeth City	PASQUOTANK	$50,000.00	2016	$37,500.00
Ribometrix, LLC	Shape RNA Structure Analysis for Drug Discovery and Translational Research	Greenville	PITT	$50,000.00	2016	$37,500.00
Adroit Materials	Development of high-power near-UV semiconductor laser diodes	Apex	WAKE	$39,999.94	2016	$29,999.96
Lupine Materials and Technology (LMT)	Optical Fiber Integration into Bi2Sr2CaCu2Ox/Ag/agX and (RE) Ba2Cu3Ox Superconducting Coils	Raleigh	WAKE	$37,500.00	2016	$28,125.00
Bennett Advanced Research, LLC	Multi-material AM	Raleigh	WAKE	$50,000.00	2016	$37,500.00
OncoTAb, Inc.	Novel immunotherapy strategy for treatment of pancreatic cancer	Charlotte	MECKLENBURG	$50,000.00	2016	$37,500.00
Affinergy, LLC	Novel technologies for improved slide quality of pancreatic fine-needle aspirates	Research Triangle Park	DURHAM	$50,000.00	2016	$37,500.00
Third Floor Materials Inc	uncooled multispectral photoemissive infrared detector	Raleigh	WAKE	$42,029.00	2016	$31,522.00
Cell Microsystems	CellRaft Array for Screening and Isolation of Highly Effective Cytotoxic T Cells	Durham	DURHAM	$44,629.00	2016	$33,472.00

Organization Legal Name	Project Title	Organization City	Organization County	Total Grant Amount Committed	Committed Fiscal Year	Amount Disbursed in FY 2016
New Jersey Microsystems, Inc	Multi-use Passive RFID Sensor Tag System	Raleigh	WAKE	$50,000.00	2016	$37,500.00
AxNano, LLC	Effective Treatment of Groundwater Pollution Using a System Utilizing Controlled Release Polymer Materials	Greensboro	GUILFORD	$50,000.00	2016	$0.00
USML L.L.C.	Satellite Ground Station Network for Real-Time Space Weather Data	Summerfield	GUILFORD	$50,000.00	2016	$0.00
				$1,954,003.83		**$1,365,503.38**

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. Some amounts are not yet disbursed because their awards were made at the end of the fiscal year and were still being process at the time this report was prepared.

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 2016 Summary

- Funding was not appropriated to allow for the operation of the Incentive Funds Program during FY 2016.

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.