one north carolina
Small Business Program

FISCAL YEAR 2018 REPORT ON THE COMMITMENT, DISBURSEMENT, AND USE OF FUNDS

As Required by §143B-437.83 of the
North Carolina General Statutes

Citation of Law or Resolution:	S.L. 2009‑451
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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 3.0%, 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 0.4% of their budgets for R&D small businesses and their partners. This set-aside currently results in the availability of approximately $250 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 2018 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 11, respectively.

PROGRAM IMPACT

Between FY 2006 and FY 2018, 488 grants, totaling more than $25 million, were issued to North Carolina small businesses.[2] As measured in a comprehensive evaluation of the Program in 2017,[3] 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 $514 million in external investments;
- Generate more than $96 million in follow-on federal SBIR/STTR funding;
- Increase the follow-on federal funding rate from 49% to 60%, six points above the U.S rate of 54%.
- Create or retain more than 900 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, FY 2014, and FY 2018. Though funding resumed in FY 2015, many 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

"Overall, we strongly agree that this program is essential to our growth and will have a great impact on our future revenue and employee growth in NC. We hope that companies can continue to benefit from this program in the future."
~ Enformia, Inc., Cary

"I can't stress enough the importance and potential that this baseline technology has and the multitude of applications that can build jobs and economic growth for North Carolina. These matching funds have been a tremendous help to reach those goals."
~ Advanced Hydrogen Technologies Corporation, Morganton

"Money awarded from the program is absolutely the most critical funding available to a small startup and positions the company for follow on Phase II funding and secures commercialization activities that are critical to overall future success. The program is a must-have for all new enterprise in the state."
~ Kepley Biosystems, Inc., Greensboro

[2] This includes 90 incentive grants, totaling $263,281.43, and 398 Matching grants, totaling $24,781,413. Information grants in previous years is available in previously submitted year-end reports.

[3] The Board of Science, Technology & Innovation conducts a comprehensive, in-depth evaluation of the Program every five years. The latest evaluation of this type was conducted in calendar year 2017; the next evaluation is scheduled for calendar year 2022.

"…the Matching Grant Program was key to the survival of our company in its earliest days. It helped us achieve profitability and grow to employ 100 people in NC."
~ Precision Biosciences, Durham

"Hugely helpful to NC small businesses. Thanks for the support! You've allowed us to be competitive with companies on the West Coast where all the funding is."
~ FokusLabs Behavioral Solutions, Inc., Wake Forest

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 2018 Summary

- In the FY 2018 Budget Act, $0.0 million was appropriated to One North Carolina Small Business Program. As a result, no new grant awards were made in FY 2018.
- The Program committed $3,654,179.52 in funding via 62 grants during FY 2017, and disbursed slightly more than ¾ of it during FY 2017.[4] The remaining amount will be disbursed as companies meet milestones in future FYs, including FY 2018.

The following table provides information, including amounts committed and disbursed, for the 40 disbursements made during FY 2018.

[4] The following two factors explain more than the FY 2017 appropriated funding was committed: (1) because the previous year's (FY 2016) 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 FY 2016, making the total number of grants during that year lower than normal and leaving a remaining balance of $418,688 that could be carried forward for use in the FY 2017 solicitation; (2) $235,491 in de-obligated funds were "recycled" and carried forward from previous years when some grantees did not meet requirements for receiving their Stage 2 payments.

Organization Legal Name	Project Title	Organization City	Organization County	Total Grant Amount Committed	Committed Fiscal Year	Amount Disbursed in FY 2017
0 Base Design, LLC	Innovative Low Flow Rate Energy Recovery System	Raleigh	WAKE	$49,982.00	2017	$49,982.00
Advanced Hydrogen Technologies Corporation	Impact Bonding of Near Net-Shaped Ceramics to Metals Driven by Hydrogen Produced from Rapid Oxidation of Aluminum	Morganton	BURKE	$65,000.00	2017	$16,250.00
Ambient Logic	Geospatial Sound Modeling for Military and Community Noise Metrics	Asheville	BUNCOMBE	$49,910.00	2017	$49,910.00
Athena's Compass	Game-Based Chem	Raleigh	WAKE	$65,000.00	2017	$16,250.00
AURA Technologies, LLC	Multi-material AM	Raleigh	WAKE	$50,000.00	2016	$12,500.00
AURA Technologies, LLC	Additive Manufacturing (AM) for Affordable Missile Defense	Raleigh	WAKE	$49,999.85	2017	$12,499.95
AxNano, LLC	Effective Treatment of Groundwater Pollution Using a System Utilizing Controlled Release Polymer Materials	Greensboro	GUILFORD	$50,000.00	2016	$12,500.00
Baebies, Inc.	Point-of-Birth Newborn Screening for MCAD/VLCAD and Galactosemia to Eliminate Deadly Delays for Time Critical Conditions	Durham	DURHAM	$65,000.00	2017	$16,250.00

BioMojo LLC	Bio-mathematical Models of Aggregated Tissues & Organ Properties	Cary	WAKE	$48,214.40	2017	$12,053.60
Blue Ridge Research and Consulting, LLC	Optimized Geospatial Tool for Ambient Soundscapes	Asheville	BUNCOMBE	$49,898.00	2017	$12,474.50
Brighton Development, LLC	Novel Low Temperature Sterilization Method for Flexible Endoscopes	Cary	WAKE	$50,000.00	2016	$12,500.00
Camras Vision, Inc.	Safety and Efficacy of a Titratable External Shunt	RTP	DURHAM	$65,000.00	2017	$16,250.00
Celldom, Inc.	High-throughput screening of arrayed single cells for automated analysis of phenotypic heterogeneity	Durham	DURHAM	$65,000.00	2017	$16,250.00
Collaborations Pharmaceuticals Inc.	Optimization of small molecule triazine antituberculars for in vivo efficacy	Fuquay Varina	WAKE	$32,346.50	2017	$8,086.00
Enzerna Biosciences. LLC	Novel tools for site-specific ablation of the mitochondrial genome	Greenville	PITT	$50,000.00	2016	$12,500.00
Eyedesis Biosciences	Novel Small Molecule Macrophage Inhibitors for the Treatment of Retinal Diseases	Chapel Hill	ORANGE	$42,804.00	2017	$32,103.00
Falcon Therapeutics, Inc.	Personalized Neural Stem Cell Therapy for Cancer	Chapel Hill	ORANGE	$59,291.50	2017	$44,468.50

Fokuslabs Behavioral Solutions, Inc.	The First Intelligent Wearable Device to Enhance Student Attention Through Personalized Self-Monitoring and Reinforcement	Wake Forest	WAKE	$65,000.00	2017	$48,750.00
Geometric Data Analytics	TOPOLOGICAL SIGNAL ANALYSIS FOR MULTI-MODAL DATA ANALYSIS	Chapel Hill	ORANGE	$43,154.50	2017	$10,789.50
IngateyGen LLC	Development of An Allergen-Reduced Peanut For Commercialization	Elizabeth City	PASQUOTANK	$50,000.00	2016	$12,500.00
Lumedica, Inc	Low cost retinal optical coherence tomography for point of care use	Durham	DURHAM	$65,000.00	2017	$16,250.00
MAA Laboratories	The novel NanoCont drug delivery technology for creating nanoformulated medicines with improved safety, better quality, and more predictable clinical responses	Raleigh	WAKE	$65,000.00	2017	$16,250.00
Metalytics, LLC	SBIR Phase I: Software and Services to Enable Metabolic Flux Analysis in Biotechnology Research	Morrisville	WAKE	$65,000.00	2017	$16,250.00
Multi3D LLC	Additive Manufacturing of Radio Frequency and Microwave Components from a Highly Conductive 3D Printing Filament	Cary	WAKE	$65,000.00	2017	$48,750.00
Nanodiagnostic Technology, LLC	Paper/nanotechnology-based bioanalytical system for rapid detection of pesticides in food and water	Concord	CABARRUS	$50,000.00	2017	$37,500.00

NCO Technologies LLC	NOVEL LOW COST TWO-DIMENSIONAL ATOMICALLY PRECISE COVALENT ORGANIC MEMBRANES	Charlotte	MECKLENBURG	$65,000.00	2017	$16,250.00
OncoTAb, Inc.	Development of Targeted Radionuclide Therapy using a Tumor Specific Antibody for TNBC	Charlotte	MECKLENBURG	$65,000.00	2017	$16,250.00
Prevention Strategies, LLC	An Integrative Approach to Control Group Creation for Prevention Research	Greensboro	GUILFORD	$65,000.00	2017	$16,250.00
Qatch Technologies LLC	Microfluidic quartz resonator based blood plasma coagulation monitors	Chapel Hill	ORANGE	$65,000.00	2017	$48,750.00
SciKon Innovation, Inc.	Low Cost Microphysiological System for Improved Pharmacodynamics	Chapel Hill	ORANGE	$50,000.00	2016	$12,500.00
ScitoVation, LLC	Development of high sensitivity in vitro assay to detect DNA double strand breaks	Durham	DURHAM	$65,000.00	2017	$48,750.00
SEATOX RESEARCH INC	Development of a Sensor for Detecting Paralytic Shellfish Poisoning Toxins	Wilmington	NEW HANOVER	$59,975.00	2017	$44,982.00
Symberix, Inc	Improving Chemotherapy Outcomes with Proprietary Molecules Targeting the Human Microbiome	Durham	DURHAM	$50,000.00	2015	$12,500.00
Third Floor Materials Inc	Uncooled multispectral photoemissive infrared detector	Raleigh	WAKE	$42,029.00	2016	$10,507.00

TriboFilm Research, Inc.	Plastic Parenteral Container with Superior Barrier Properties for Biologics	Raleigh	WAKE	$65,000.00	2017	$16,250.00
United Protective Technologies, LLC	Advanced Durability Coatings for Unmanned Aerial Vehicle Propulsion	Locust	STANLY	$65,000.00	2017	$16,250.00
Vadum Inc	Distributed Coherent Communications	Raleigh	WAKE	$49,991.00	2017	$12,498.00
Windlift	Ultra-Lightweight Expeditionary Power System (U-LEPS)	Raleigh	WAKE	$40,000.00	2016	$10,000.00
Total				**$2,222,487.75**		**$841,604.05**

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 2017 Summary

- Funding was not appropriated to allow for the operation of the Incentive Funds Program during FY 2018.

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.