one north carolina
Small Business Program

FISCAL YEAR 2021 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 3.2%, resulting in the availability of approximately $3.28 billion in fiscal year 2019 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 0.45% of their budgets for R&D small businesses and their partners. This set-aside currently results in the availability of approximately $453 million for fiscal year 2019.

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 2021 (7/1/2020-6/30/2021) 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.

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

PROGRAM IMPACT

Between FY 2006 and FY 2020, 513 grants, totaling more than $26.2 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 enable:

- the creation and retention of nearly 900 private sector jobs statewide – more to come as more companies benefit and grow.
- more than 250 small businesses bring to market biotechnology, nanotechnology, medical technologies, computer software, military/defense technologies, pharmaceuticals, textiles, and other high-tech applications.
- more than 77 percent of the small businesses to remain in operation.
- the small businesses to attract more than $515 million in external investment, including more than $122 million in follow-on federal funds.
- 60 percent of NC matching grant winners to win Phase II federal grant awards, each with a considerably larger average value of $1 million (nationally, 54 percent of Phase I award winners graduate to Phase II awards).
- the small businesses to produce more than $125 million in total sales resulting directly from the technology developed with Program funding.
- significant technology/business-development partnerships among NC universities & businesses.

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, FY 2018, and FY 2020.

SAMPLE TESTIMONIALS

"This program has been great and the funds essential for the results we have achieved."
~ Intelli-Products, Asheville

"This program delivers significant impact for my company and others. Expansion of the program will offer job growth and continued enhancement of North Carolina on the National and Global level."
~PrimeNeuro, Inc., Durham

[2] This includes 90 incentive grants, totaling $263,281, and 423 Matching grants, totaling $25,936,719. Information on 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 program has been a game-changer for our business. Mention of the funding has helped grant us entry with other collaborators, entrepreneurs, and college and university resources in NC that have enriched our business and improved our products."
~Haw River Mushrooms, LLC., Graham

"The process of application for this Matching Fund is streamlined and decisions are fast. Overall, I think this program is amazing and genuinely hope that it continues along the current path and even expands to allow for greater contributions into our local community."
~SinnovaTek, Raleigh

"Perfect. It really helped us provide a hands-on demo that had a huge impact in our success."
~Vigilant Cyber Systems, Inc., Mount Airy

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 2021 Summary

- The Coronavirus Relief Act (SL 2020-97) appropriated $1,500,000.00 to the Program for the mitigation of impacts from COVID-19 at eligible businesses to foster job creation and promote research and technological development in response to COVID-19. Due to the requirement that Coronavirus Relief funds be expended by December 31, 2020, only grant recipients who completed their federal Phase II requirements by that deadline were eligible for state stage 2 payments, with the remaining funds reclaimed by the program.
- The Program committed $1,952,670.81 and disbursed $1,500,000.00 in funding via 29 grants during FY 2021, with the remaining $452,669.79 de-obligated from grantees unable to meet the requirements for receiving their Phase II payments. No outstanding commitments remain from FY 2021, and 100% of the appropriated funding was disbursed through grants.
- The Program also disbursed $37,500 total to three grantees from FY 2019, and $16,250 to one grantee from FY 2017.

The following table provides information, including amounts committed and disbursed during FY 2021.

Organization Legal Name	Project Title	Organization City	Organization County	Total Grant Amount Committed	Committed Fiscal Year	Amount Disbursed in FY 2021
Altis Biosystems, Inc.	Generating drug-screenable primary human intestinal epithelium by gene-editing and transgenesis	Durham	DURHAM	$100,000.00	2021	$75,000.00
Atom Bioworks, Inc	COVID-19 Rapid Sensing Using Structural DNA Biosensor	Cary	WAKE	$96,072.15	2021	$72,054.11
AURA Technologies, LLC	Advanced Electronic Device Management System	Raleigh	WAKE	$100,000.00	2021	$75,000.00
Baebies, Inc.	Identification of glycosaminoglycans for newborn screening and therapeutic monitoring of mucopolysaccharidoses	Durham	DURHAM	$74,954.76	2021	$56,216.07
Bear Fiber, Inc.	US Hemp Fiber Produced for Domestic and Export Textile Markets	Wilmington	NEW HANOVER	$94,439.52	2021	$70,829.64
Bedrock Therapeutics	Prevention of corneal transplant rejection using AAV-HLA-G combination therapy	Raleigh	WAKE	$12,753.87	2021	$9,565.40
Benanova, Inc.	COVID-19-impermeable high-performance porous coatings for respiratory personal protective equipment	Cary	WAKE	$100,000.00	2021	$75,000.00
BioMojo, LLC	Digital Representation of People (DROP)	Cary	WAKE	$46,715.75	2021	$46,715.75
EncepHeal Therapeutics	Novel Modafinil Analogs as Cocaine Pharmacotherapies	Winston-Salem	FORSYTH	$65,000.00	2017	$16,250.00

EpiCypher, Inc.	Development of efficient quantitative chromatin profiling in kit and high-throughput formats	Durham	DURHAM	$100,000.00	2021	$75,000.00
IngateyGen, LLC	Progeny Analysis of a Chimera-free Hypoallergenic Peanut	Elizabeth City	PASQUOTANK	$50,000.00	2019	$12,500.00
Innatrix	Directed protein evolution: Creating high affinity protein ligands for controlling economically detrimental plant pathogens and pests	Durham	DURHAM	$98,068.25	2021	$73,551.19
Interventional AnalgesiX, Inc.	2nd-Generation Spinal Analgesic Resiniferatoxin	Durham	DURHAM	$50,000.00	2019	$12,500.00
Mucommune, LLC	Inhaled 'muco-trapping' antibody as universal immunotherapy for influenza virus infections	Carrboro	ORANGE	$48,708.01.01	2021	$36,351.01
Murano Corporation	Tablet Based Repair Management with Artificial Intelligence (AI)	Research Triangle Park	DURHAM	$47,381.06	2021	$47,381.06
MuukLabs, Inc.	SBIR Phase I: MuukTest Artificial Intelligence Powered Software Testing	Raleigh	WAKE	$68,496.47	2021	$51,372.51
Onda Vision Technologies, Inc.	Cover-2: Safety-as-a-Service	Raleigh	WAKE	$52,090.79	2021	$39,068.09
OpiAID, LLC	Development of the Strength Band Platform, a Technology Assisted Therapy Platform to Aid with Opioid Abuse Treatment	Wilmington	NEW HANOVER	$99,287.22	2021	$74,465.42
Perotech, Inc.	Low-cost, High Efficiency, and Non-rigid, Perovskite- based Single-junction or Tandem Solar Cells	Chapel Hill	ORANGE	$23,614.85	2021	$17,711.14

PhotoCide Protection, Inc.	STTR Phase I: Development and Commercialization of the SafeLight Family of Antimicrobial Materials for Combatting the COVID-19 Pandemic and Hospital Acquired Infections	Apex	WAKE	$21,648.14	2021	$16,231.11
Plakous Therapeutics, Inc.	Development of a human placental extract for the prevention of necrotizing enterocolitis in premature babies	Winston-Salem	FORSYTH	$97,322.61	2021	$72,991.96
Predictive, LLC	Development of a web-based platform implementing novel Predictor of Skin Sensitization for Medical Devices (PreSS/MD)	Raleigh	WAKE	$24,619.00	2021	$18,464.25
Pulvinar Neuro, LLC	XCSITE 200: Cloud-Enabled Transcranial Current Stimulation Research Solution	Durham	DURHAM	$18,288.75	2021	$13,716.56
Qatch Technologies, LLC	Injectability analysis of high concentration protein formulations by extending shearrate range in microfluidic quartz viscometers	Chapel Hill	ORANGE	$40,460.55	2021	$30,345.41
Ramona Optics, Inc.	Rapid 3D Whole-Slide Digitization of Thick Cytopathology Slides with a Gigapixel Microscope	Durham	DURHAM	$87,400.74	2021	$66,550.56
Redbud Labs, Inc.	A modular platform for infectious disease surveillance at point-of-need	Research Triangle Park	DURHAM	$98,953.98	2021	$74,215.49
Rescindo Therapeutics, Inc.	Developing a new therapeutic agent for Kabuki Syndrome	Cary	WAKE	$50,000.00	2019	$12,500.00
SinnovaTek, Inc.	Clean, cost-effective technology to recover and stabilize phytoactive fruit compounds from waste streams	Raleigh	WAKE	$100,000.00	2021	$75,000.00

SonoVol	A new robotic AI imaging platform for improved kidney disease research and drug discovery	Durham	DURHAM	$98,241.55	2021	$73,681.16
Susteon, Inc.	Dual Function Materials for Direct Air Capture of CO2	Cary	WAKE	$99,985.34	2021	$74,989.01
TeleSwivel, LLC	Autonomous Trailer Hitch System	Durham	DURHAM	$28,267.50	2021	$21,200.63
Triangle Biotechnology, Inc.	Improving diagnostic sensitivity for difficult-to-lyse microbial samples with nanodroplet technology	Chapel Hill	ORANGE	$27,009.19	2021	$20,256.89
Wiser Systems, Inc.	Autonomous Asset Tracking and Inventory WISER RTLS and WSA Corp SmarTrack	Raleigh	WAKE	$47,890.76	2021	$47,890.76
Total				**$2,118,962.80**		**$1,554,565.18**

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, Technology & Innovation, 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 2021 Summary

- Funding was not appropriated to allow for the operation of the Incentive Funds Program during FY2021.

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.