



**FISCAL YEAR 2011 REPORT ON THE COMMITMENT,  
DISBURSEMENT, AND USE OF FUNDS**

|                                       |                   |
|---------------------------------------|-------------------|
| <b>Citation of Law or Resolution:</b> | S.L. 2009-451     |
| <b>Section Number:</b>                | Section 14.5(c)   |
| <b>Due:</b>                           | September 1, 2011 |
| <b>Submitted:</b>                     | September 1, 2011 |

**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 and 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), 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 2011 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 2011.

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**.<sup>1</sup> 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 2011 commitment and disbursement information for only the Matching Funds Program, as overall Program funding was insufficient to allow for the operation of the Incentive Funds Program during FY 2011. Information for previous fiscal years is available in previously submitted year-end reports for those years.

---

<sup>1</sup> Descriptions of both programs are provided later in this report, on pages 3 and 5, 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.<sup>2</sup> As of August 31, 2011, 139 federal Phase I projects, receiving more than \$10.9 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 \$15 million in internal capital investments;
- Leverage more than \$39 million in external capital investments;
- Generate more than \$52 million<sup>3</sup> in follow-on federal SBIR/STTR funding;<sup>4</sup>
- Create more than 140 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

*These matching funds have been invaluable in helping our company survive the major recession. Without them, we simply may not still be in operation."*

*"The state funding allowed us to receive an additional federal grant. The funding also helped boost our infrastructure and carry out more extensive research than would have been possible with just the federal funding."*

*"The matching funds program has been critically important for meeting our goals. We have been able to pay for expenses related to prosecuting three patents and we are currently working with a consultant to aggressively pursue commercial partnership and licensing opportunities. Without NC matching funds, we would not have been able to meet these expenses."*

---

## MATCHING FUNDS PROGRAM

---

<sup>2</sup> 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.

<sup>3</sup> Sixty five of the 139 small businesses received Phase II awards. This success rate is at least five to 10 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.

<sup>4</sup> 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.

## **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 and 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 2011 Summary**

- In the FY 2011 Budget Act, \$1,500,000 was appropriated to One North Carolina Small Business Program, of which 100 percent was allocated to the Matching Funds Program.
- The FY 2011 Program Solicitation was released on September 15, 2011.
- Award levels were set at 50 percent of a firm's federal SBIR/STTR Program award, up to a maximum amount of \$30,000. Consistent with the Program's Guidelines, awards were made on a first-come, first-served basis.

In FY 2011, 44 NC small businesses received matching grants. The following table provides data for all committed and disbursed award amounts during FY 2011:

| Organization Legal Name        | Project Title                                                                                     | Organization City      | Organization County | Total Grant Amount Committed | Committed Fiscal Year | FY 2011 Grant Amount Disbursed |
|--------------------------------|---------------------------------------------------------------------------------------------------|------------------------|---------------------|------------------------------|-----------------------|--------------------------------|
| SoyMeds, Inc.                  | A novel therapy for staphylococcal enterotoxin B poisoning                                        | Davidson               | MECKLENBURG         | \$100,000.00                 | 2007                  | \$25,000.00                    |
| HERMES, LLC                    | Adaptation of post-disaster mental health training for black communities                          | Wilmington             | NEW HANOVER         | \$100,000.00                 | 2008                  | \$25,000.00                    |
| Alditri Technologies, Inc.     | Nano-enhanced Fibrous Structures for Pathogenic Virus Elimination from Biopharmaceutical Products | Raleigh                | WAKE                | \$75,000.00                  | 2009                  | \$18,750.00                    |
| GrassRoots Biotechnology, Inc. | Improving Root Architecture in Energy Crops                                                       | Durham                 | DURHAM              | \$75,000.00                  | 2009                  | \$18,750.00                    |
| Rivis, Inc.                    | Electrical power generation for sustained high speed flight                                       | Research Triangle Park | DURHAM              | \$53,849.33                  | 2009                  | \$13,462.33                    |
| A-B-Sea Research               | GPS Reference While Submerged                                                                     | Raleigh                | WAKE                | \$34,928.20                  | 2010                  | \$26,196.15                    |
| Advanced TeleCare, LLC         | Enhancing Group Identity May Improve Effectiveness of Diabetes Self-Management Education          | Raleigh                | WAKE                | \$50,000.00                  | 2010                  | \$37,500.00                    |
| Allotropica Technologies, Inc. | "SBIR Phase I: Mesoporous Graphene Electrodes for Supercapacitors.                                | Chapel Hill            | ORANGE              | \$50,000.00                  | 2010                  | \$37,500.00                    |

| Organization Legal Name               | Project Title                                                                                                                                | Organization City | Organization County | Total Grant Amount Committed | Committed Fiscal Year | FY 2011 Grant Amount Disbursed |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------|------------------------------|-----------------------|--------------------------------|
| Arctic, Inc.                          | Non-Polluting Method of Weed Control                                                                                                         | Clemmons          | FORSYTH             | \$50,000.00                  | 2010                  | \$12,500.00                    |
| Gigabeam Acquisition Corporation      | SBIR Phase I: 256 QAM Modem Supporting 10 Gb/s Radio.                                                                                        | Durham            | DURHAM              | \$50,000.00                  | 2010                  | \$37,500.00                    |
| Identizyme Defense Technologies, Inc. | Low/No Power detector for Organophosphate Nerve Agents                                                                                       | Chapel Hill       | ORANGE              | \$34,994.50                  | 2010                  | \$26,245.88                    |
| KeraNetics, LLC                       | Keratin biomaterial-based fluid for trauma resuscitation                                                                                     | Winston Salem     | FORSYTH             | \$50,000.00                  | 2010                  | \$37,500.00                    |
| Parion Sciences                       | The Development Epithelial Sodium Channel Blockers for Chronic Dry Eye                                                                       | Durham            | DURHAM              | \$50,000.00                  | 2010                  | \$37,500.00                    |
| Piedmont Biofuels Industrial          | Utilization of Immobilized Lipase System for Waste Water Reduction in the Bioenergy Industry                                                 | Pittsboro         | CHATHAM             | \$50,000.00                  | 2010                  | \$37,500.00                    |
| QuarTek Corporation                   | Specially Functionalized Nanomagnetic Particles & Ionic Liquids for Harvesting, Dewatering & Extraction of Lipids & Carbohydrates from Algae | Greensboro        | GUILFORD            | \$50,000.00                  | 2010                  | \$37,500.00                    |
| Tensive Controls, Inc                 | Melanocortin Ligands in Disease Cachexia                                                                                                     | Greensboro        | GUILFORD            | \$50,000.00                  | 2010                  | \$37,500.00                    |
| 3-C Institute for Social              | An interactive social tutoring system to improve and                                                                                         | Cary              | WAKE                | \$30,000.00                  | 2011                  | \$22,500.00                    |

| Organization Legal Name        | Project Title                                                                                                      | Organization City      | Organization County | Total Grant Amount Committed | Committed Fiscal Year | FY 2011 Grant Amount Disbursed |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------|------------------------|---------------------|------------------------------|-----------------------|--------------------------------|
| Development, Inc.              | measure social goals for students with HFASD                                                                       |                        |                     |                              |                       |                                |
| Advanced Digital Systems, Inc. | Clinical trials data collection during patient care using a novel technology solution                              | Durham                 | DURHAM              | \$30,000.00                  | 2011                  | \$22,500.00                    |
| Affinergy, Inc.                | Development of an adipose-derived stem cell isolation matrix                                                       | Research Triangle Park | DURHAM              | \$30,000.00                  | 2011                  | \$22,500.00                    |
| Agile Sciences Inc.            | Targeting Oral Biofilms with 2-Aminoimidazole/Triazole Conjugates                                                  | Raleigh                | WAKE                | \$30,000.00                  | 2011                  | \$22,500.00                    |
| Algaen Corporation             | Bioremediation of Animal Wastewater Using Oil-Rich Microalgae                                                      | Winston-Salem          | FORSYTH             | \$30,000.00                  | 2011                  | \$22,500.00                    |
| Altometrics, Inc.              | SBIR Phase I: Investigating the Feasibility of a Real-time Cloud Computing Application Performance Management Tool | Durham                 | DURHAM              | \$30,000.00                  | 2011                  | \$22,500.00                    |
| b3 bio, inc.                   | Modular internalizing molecules for treatment of more than one stage of malignancy in prostate cancer              | Durham                 | DURHAM              | \$30,000.00                  | 2011                  | \$22,500.00                    |
| BioMedomics, Inc.              | Nanotube Based Lateral Flow Nanosensing Platform for Highly Sensitive Cancer Detection                             | Research Triangle Park | DURHAM              | \$30,000.00                  | 2011                  | \$22,500.00                    |

| Organization Legal Name                                  | Project Title                                                                      | Organization City      | Organization County | Total Grant Amount Committed | Committed Fiscal Year | FY 2011 Grant Amount Disbursed |
|----------------------------------------------------------|------------------------------------------------------------------------------------|------------------------|---------------------|------------------------------|-----------------------|--------------------------------|
| Black Velvet Solar, Inc.                                 | Fuel Efficient Micro Grid for Forward Operating Base (FOB)                         | Chapel Hill            | ORANGE              | \$30,000.00                  | 2011                  | \$22,500.00                    |
| Cognosci, Inc.                                           | High Throughput Screen for Novel Anti-Rheumatic Compounds                          | Research Triangle Park | DURHAM              | \$30,000.00                  | 2011                  | \$22,500.00                    |
| Corvid Technologies                                      | Prediction of the Full-Scale Cook-off Response Based on Small Scale Testing        | Mooresville            | IREDELL             | \$22,497.00                  | 2011                  | \$16,872.75                    |
| GEM Tox Consultants and Labs, Inc.                       | A MicroRNA Approach to Screen for Sporadic Colon Cancer Exfoliately in Human Stool | Greenville             | PITT                | \$30,000.00                  | 2011                  | \$22,500.00                    |
| Innovation Research and Training, Inc.                   | Substance Use Prevention Elementary Afterschool Program                            | Durham                 | DURHAM              | \$30,000.00                  | 2011                  | \$22,500.00                    |
| International Association of Virtual Organizations, Inc. | IPS Manager (Integrated Power Systems Manager)                                     | Durham                 | DURHAM              | \$30,000.00                  | 2011                  | \$7,500.00                     |
| Laser Biopsy Inc                                         | A Novel, Compact, Wide Field of View, Multiphoton Microscope                       | Candler                | BUNCOMBE            | \$30,000.00                  | 2011                  | \$22,500.00                    |
| Morphormics, Inc                                         | Thorax Autosegmentation for Radiotherapy of Lung Cancer                            | Chapel Hill            | ORANGE              | \$30,000.00                  | 2011                  | \$22,500.00                    |
| Novan, Inc.                                              | Time-Released Nitric Oxide for the Treatment of Military Wound Infections          | Research Triangle Park | DURHAM              | \$30,000.00                  | 2011                  | \$22,500.00                    |

| Organization Legal Name             | Project Title                                                                                | Organization City | Organization County | Total Grant Amount Committed | Committed Fiscal Year | FY 2011 Grant Amount Disbursed |
|-------------------------------------|----------------------------------------------------------------------------------------------|-------------------|---------------------|------------------------------|-----------------------|--------------------------------|
| Precision BioSciences               | Genetic Engineering of Cell Lines for Bioproduction                                          | Durham            | DURHAM              | \$30,000.00                  | 2011                  | \$22,500.00                    |
| Signal Innovations Group, Inc.      | Performance Prediction of Feature Aided Trackers using Persistent Sensors                    | Durham            | DURHAM              | \$30,000.00                  | 2011                  | \$22,500.00                    |
| TheraLogics, Inc.                   | Evaluation of NBD Peptides as an Adjunct Therapy for the Treatment of Non-Hodgkin's Lymphoma | Chapel Hill       | ORANGE              | \$30,000.00                  | 2011                  | \$22,500.00                    |
| United Protective Technologies, LLC | Improved Gear Carburization Process                                                          | Locust            | STANLY              | \$30,000.00                  | 2011                  | \$22,500.00                    |
| Vadum Inc                           | "Multi-shot EOD Disruptor for Robotic Applications                                           | Raleigh           | WAKE                | \$30,000.00                  | 2011                  | \$22,500.00                    |
| Vortant Technologies, LLC           | Walker Monitor to Inhibit Freezing of Gait by Individuals with Parkinson's Disease           | Weaverville       | BUNCOMBE            | \$29,016.00                  | 2011                  | \$21,762.00                    |
|                                     |                                                                                              |                   | <b>Total</b>        | <b>\$1,605,285.03</b>        |                       | <b>\$962,039.11</b>            |

*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 2011 Summary**

- Overall Program funding was insufficient to allow for the operation of the Incentive Funds Program during FY 2011.

---

## **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.