One North Carolina Small Business Awards
July 1, 2023 – June 30, 2024

Under the FY 2024 Matching Program Solicitation, companies were eligible for Matching awards equal to 50% of the federal SBIR/STTR award, up to $60,000.

- **Advanced Materials Manufacturing, of Raleigh:** $60,000 to develop nickel-based composite metal foam (CMF) for use in nuclear energy applications. The project aims to create a high-performance, lightweight, and environmentally friendly material that enhances performance, safety, and efficiency in nuclear reactors. The material has potential applications spanning a multitude of other defense and civilian markets. This SBIR project is sponsored by the U.S. Department of Energy.
- **Anuma Aerospace Corporation, of Raleigh:** $60,000 to develop a gas-free aerial system designed to continuously collect and transmit weather data. This system aims to provide valuable, long-term, high-quality weather data for meteorological and climate research applications, with the potential to create a global network for more efficiency and cost-effective atmospheric data collection. This SBIR project is sponsored by the National Oceanic & Atmospheric Administration in the U.S. Department of Commerce.
- **Applied Research Transformation, PLLC, of Research Triangle Park:** $49,984.72 to create a system that improves quality control in 3D concrete printing by monitoring and adjusting bond strength between layers in real time, even in changing conditions. This aims to make 3D printing more reliable and sustainable in construction, addressing challenges like labor shortages and waste reduction. This SBIR project is sponsored by the National Institute of Standards and Technology in the U.S. Department of Commerce.
- **Archaius Inc, of Durham:** $37,050 to develop an advanced GPS Anti-Distortion module (GADm) that will be tested to demonstrate its ability to cancel interference and protect GPS signals across multiple frequencies. The technology aims to enhance the reliability of GPS and GNSS systems, including military-grade signals such as M-Code. This SBIR project is sponsored by the United States Air Force in the U.S. Department of Defense.
- **Artiam Bio Inc., of Morrisville:** $60.000 to develop a new treatment for Alcohol Use Disorder (AUD). Their approach focuses on second-generation cannabinoid receptor blockers that reduce alcohol cravings without the psychiatric side effects observed in earlier treatments. This treatment will be tested in preclinical studies, aiming to advance it toward clinical development for treating AUD. This STTR project is sponsored by the National Institutes of Health in the U.S. Department of Health and Human Services.

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- **BENANOVA Inc., of Cary:** $60,000 to develop a new bionematicide to control harmful plant parasitic nematodes, specifically *Meloidogyne enterolobii*, which cause more than $170 billion of crop damage worldwide, annually. This project aims to create eco-friendly formulations from renewable materials and test their effectiveness in greenhouse trials. The goal is to develop a sustainable and effective solution to protect crops from nematode pests and improve agricultural yields. This SBIR project is sponsored by the U.S. Department of Agriculture.
- **BioKier, Inc., of Chapel Hill:** $60,000 to develop a new drug, BKR-017, to address cardiometabolic diseases (CMD) such as heart disease, diabetes, and stroke by improving gut health. Unlike current treatments, BKR-017 uses butyrate to naturally manage cholesterol and glucose levels. The goal of this project is to test the safety of BKR-017 in clinical trials, with plans to evaluate its effectiveness in reducing cholesterol and cardiovascular risk. This SBIR project is sponsored by the National Institutes of Health in the U.S. Department of Health and Human Services.
- **Boundless Science LLC, of Durham:** $60,000 to develop a new system to improve life-saving support for patients with severe lung failure. This device uses a liquid called perfluorocarbon to oxygenate the blood with less risk of clots of bleeding compared to current treatments. This project aims to make lung support treatments safer and more effective for patients in critical condition. This SBIR project is sponsored by the National Institutes of Health in the U.S.Department of Health and Human Services.
- **Boyte Group Inc., of Carthage:** $37,418 for the implementation of a mobile app designed to enhance crisis management in schools. The app provides real-time situational awareness, communication, and integration with emergency services to help schools respond more effectively to crises, from medical emergencies to active shooter incidents. Using GPS and GIS mapping technologies, the app aims to improve safety by reducing response times and ensuring staff and students are informed and accounted for during emergencies. This SBIR project is sponsored by the United States Air Force in the U.S. Department of Defense.
- **Cervu, of Cary:** $60,000 to develop a specialized device to help female cancer survivors manage pelvic pain, a common side effect of cancer treatments. This device is designed to meet the unique needs of survivors by offering multiple therapies. In Phase I, Cervu will refine and test a prototype, aiming to provide an effective, user-friendly solution that improves the quality of life for cancer survivors. This SBIR project is sponsored by the National Institutes of Health in the U.S. Department of Health and Human Services.
- **Clue Genetics Inc., of Hillsborough:** $60,000 to create a platform to discover valuable natural compounds from fungi for use in industries such as pharmaceuticals and agriculture. By analyzing fungal genomes, they aim to identify gene clusters that produce bioactive compounds such as anti-cancer agents and antibiotic, offering a cost-effective way to access previously hard-to-produce chemicals for drug discovery and other applications. This SBIR project is sponsored by the National Science Foundation.

- **Converter Source, LLC, of Asheville:** $60,000 to work on a new motor controller that can precisely control the movement of machine pistons, even in unpredictable conditions. After successful virtual testing, the company is moving to real-world testing in laboratory settings. This project will help refine the hardware controller for future use in other machines, ensuring stable and reliable performance. This SBIR project is sponsored by the National Aeronautics & Space Administration.
- **Delgen Biosciences Inc., of Chapel Hill:** $60,000 to develop a long-acting treatment for wet age-related macular degeneration (AMD), a leading cause of blindness. Their approach uses a novel technology to extend the effectiveness of anti-VEGF drugs, reducing the need for frequent eye injects and improving patient outcomes. This SBIR project is sponsored by the National Institutes of Health in the U.S. Department of Health and Human Services.
- **DuraVax Inc., of Wilmington:** $60,000 to develop thermostable liquid formulations for mRNA vaccines and therapeutics that can be stored and transported without freezing, eliminating the need for freezing during storage, transportation, and distribution. This innovation could reduce costs, minimize waste, and improve access to mRNA drugs, especially in underserved areas. Phase I will focus on proving the stability and safety of these formulations. This STTR project is sponsored by the National Science Foundation.
- **Enfuego Therapeutics, Inc., of Pittsboro:** $60,000 to develop a new treatment for cancers driven by the KRAS G12V mutation, which is common in lung, colon, and pancreatic cancers. Using RNA-based technology, this approach targets and silences the mutated cancer genes without harming healthy cells. The project aims to create a more effective therapy for aggressive cancers like metastatic lung cancer, with fewer side effects. This SBIR project is sponsored by the National Institutes of Health in the U.S. Department of Health and Human Services.
- **Fathom Science LLC, of Raleigh:** $60,000 to develop an advanced Artificial Intelligence (AI)/Machine Learning (ML)- based system for highly efficient and accurate wave forecasting to support the Blue Economy. This innovative technology will improve predictions of wave patterns, which are crucial for activities like marine energy resource management, coastal protection, and offshore infrastructure design. This project aims to enhance the precision of wave forecasts, offering a faster, more reliable solution compared to traditional methods, with broad applications in renewable energy and marine operations. This STTR project is sponsored by the U.S. Department of Energy.
- **Freescale LLC, of Cary:** $60,000 to develop innovative nano-composite inks that mimic brain synapses to improve neuromorphic computing. This project aims to create a fully printed crossbar array to demonstrate the potential for energy-efficient, smart sensor technology and advanced electronics. This STTR project is sponsored by the National Science Foundation.
- **GreenlifeTech Corporation, of Banner Elk:** $50,000 to develop a system to extend the shelf life of produce in modern refrigerators by reducing oxygen levels, increasing freshness by up to 500%. This technology also uses small amounts of ozone to kill bacteria, parasites, and viruses, enhancing food safety. The project aims to reduce food waste, increase consumer safety, and improve the longevity of refrigerated items. This SBIR project is sponsored by the Environmental Protection Agency.

- **H3Pelvic Therapy Systems, of Lewisville:** $60,000 to develop a new device, RICAT, to provide opioid-free pain relief for those suffering from chronic pelvic pain conditions like interstitial cystitis and endometriosis. Their approach uses targeted cold and heat therapy with smart monitoring to provide effective pain relief. This project will test the system in preclinical settings, aiming to create a safe, non-drug treatment for millions suffering from pelvic pain. This SBIR project is sponsored by the National Institutes of Health in the U.S. Department of Health and Human Services.
- **Hoofprint Biome, Inc., of Raleigh:** $60,000 to develop a probiotic yeast that reduces methane emissions from cattle, addressing a significant source of global greenhouse gas emissions. The yeast also boosts digesting and milk production, making it a cost-effective solution that will help farmers boost profitability while reducing the environmental impact of beef and dairy production. This SBIR project is sponsored by the National Science Foundation.
- **iSimcha, LLC, of Durham:** $60,000 to develop a platform to address underrepresentation of minority groups in clinical trials by helping older adults from diverse backgrounds find and enroll in studies. The platform combines community-based research, medical education, and an easy-to-use clinical trial finder powered by Artificial Intelligence (AI)/Machine Learning (ML) tools. The project aims to refine the app's design and usability through user feedback, with the long-term goal of increasing minority participation in clinical trials and reducing health disparities. This SBIR project is sponsored by the National Institutes of Health in the U.S. Department of Health and Human Services.
- **Mammae Biosciences Inc, of Raleigh:** $60,000 to develop a method to produce valuable compounds found in human milk at a commercial scale. These compounds promote gut health, boost immunity, and support cognitive development, making them ideal for infant foods and supplements. The technology could offer new opportunities for food and supplement manufacturers to create gut-health solutions for people of all ages. This SBIR project is sponsored by the National Science Foundation.
- **Mimetics, LLC, of Chapel Hill:** $60,000 to develop software to improve the analysis of gene expression in bioproduction processes, particularly with yeast, a key organism in biofuel production. By providing more precise insights into how organisms behave during production, the software will help scale up the bioproduction from the lab to commercial levels efficiently. The ultimate goal is to offer this software as a service, enabling industries to optimize and accelerate their bio-based manufacturing processes. This SBIR project is sponsored by the U.S. Department of Energy.
- **mithrilAI Corp., of Raleigh:** $60,000 to develop hardware-layer defenses for Artificial Intelligence (AI)/Machine Learning (ML) applications to prevent security threats. By using masking technology, the team will protect against hardware vulnerabilities that could compromise sensitive data or cause critical errors in AI systems. The project will address challenges in real-world AI/ML applications, improving security while maintaining performance. his SBIR project is sponsored by the National Science Foundation.

- **Multi3D INC, of Middlesex:** $60,000 to develop highly conductive polymer composites for next-generation electronics manufacturing. These materials will have the conductivity suitable for advanced applications like energy storage and communication devices. The goal is to improve conductivity while maintaining low manufacturing costs, using processes like 3D printing and injection molding. These materials could revolutionize electronics manufacturing, offering lighter, more compact devices that can withstand harsh environments at a lower cost. This SBIR project is sponsored by the U.S. Department of Energy.
- **NeuroGT, Inc., of Chapel Hill:** $60,000 to develop a new protein-based therapy to clear pre-existing antibodies that block the effectiveness of viral gene therapy treatments. Currently, patients with certain antibodies cannot receive these life-saving treatments. The proposed therapy is designed to temporarily remove these antibodies and allow successful gene therapy. The project will focus on refining the therapy and testing it in animal models, with the goal of eventually advancing to human clinical trials. This SBIR project is sponsored by the National Institutes of Health in the U.S. Department of Health and Human Services.
- **Oncotrap Inc, of Chapel Hill:** $60,000 to develop a new treatment for pancreatic cancer that uses a drug conjugate that specifically targets pancreatic cancer cells while sparing healthy cells. By combining a highly selective aptamer with a drug delivery system, the treatment aims to be more effective in killing cancer cells. Early testing will focus on the effectiveness of this method in both lab and animal models, with the goal of advancing to human trials in the future. This SBIR project is sponsored by the National Institutes of Health in the U.S.Department of Health and Human Services.
- **Raglan LLC, of Wilmington:** $60,000 to develop an open-architecture electronic control unit (ECU) for non-standard commercial vehicles (NSCV). This project aims to create a flexible ECU system that improves functionality, integrates cutting edge navigation and communication technologies, and meets mission requirements. This SBIR project is sponsored by the United States Special Operations Command in the U.S. Department of Defense.
- **Syzygy Optics Incorporated, of Chapel Hill:** $60,000 to develop advanced technology for hyperspectral imaging, using their patented curved Volume Phase Holographic (VPH) gratings. Ther new design for a high-performance spectrometer prototype uses highly efficient components to improve image quality and reduce distortions, making it a powerful tool for future scientific and industrial applications. This STTR project is sponsored by the National Science Foundation.
- **Teen Health Research, Inc., of Raleigh:** $60,000 to build a platform designed to improve parent-adolescent communication about sexual and reproductive health. Targeted at adolescents aged 10-13, it provides personalized, culturally sensitive resources to guide conversations on these topics. The project aims to develop a test version of the platform and gather feedback to ensure usability and effectiveness in fostering open, meaningful discussion about sexual health. This STTR project is sponsored by the National Institutes of Health in the U.S. Department of Health and Human Services.

- **TeleSwivel, LLC, of Durham:** $60,000 to develop a modern, autonomous hitch system to replace the Army's outdated towing equipment. This new system will allow vehicles to connect automatically, improving safety by eliminating the need for soldiers to manually attach trailers in hazardous conditions. The technology aims to make towing faster, safer, and more efficient, especially as the Army adopts more autonomous vehicle system technology in the future. This SBIR project is sponsored by the United States Army in the U.S. Department of Defense.
- **TransChromix, of Chapel Hill:** $60,000 to develop a new treatment to prevent and reverse early-stage Type 1 Diabetes (T1D). Unlike current treatments that focus on managing symptoms, this approach targets the immune cells attacking insulin-producing B cells. Using small molecule inhibitors, the team has shown successes in reducing harmful immune cells in mice models. The goal of this project is to create a precision medicine platform for T1D, potentially stopping the disease before it fully progresses. This STTR project is sponsored by the National Institutes of Health in the U.S. Department of Health and Human Services.
- **United Protective Technologies, LLC, of Locust:** $60,000 to develop two advanced self-lubricating nanocomposite coatings for small unmanned aerial vehicles (UAVs) and attritable (low-cost, reusable) weapon systems. These coatings aim to reduce the need for traditional lubrication, significantly cutting engine weight, cost and maintenance. One coating reduces friction in dry conditions, while the other enhances lubrication using jet fuel. Both solutions improve wear resistance, reduce maintenance, and enhance engine performance, particularly in challenging conditions like high-G forces or oil shortages. This SBIR project is sponsored by the United States Navy in the U.S. Department of Defense.
- **Venti, LLC, of New Bern:** $37,388 to develop technology for rapid detection, identification, and monitoring of Chemical, Biological, Radiological, and Nuclear (CBRN) threats in battlefield and domestic environments. The goal is to enhance the U.S. Air Force's ability to efficiently deploy resources while minimizing personnel exposure. The solution will support both static and agile defense operations, aligning with key U.S. Air Force priorities for resilient basing and mission readiness. This SBIR project is sponsored by the United States Air Force in the U.S. Department of Defense.
- **Vigilant Cyber Systems, Inc., of Mount Airy:** $60,000 to develop an automated system that monitors and assesses shipboard systems for faults, providing a clear, real-time overview of mission readiness. Using Artificial Intelligence (AI)/Machine Learning (ML) algorithms, the tool will process data from ship control systems and offer easy-to-understand insights for crew members, reducing their workload and improving situational awareness. This system will enhance fault management, maintenance planning, and overall ship health monitoring. This SBIR project is sponsored by the United States Navy, Department of Defense.

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One North Carolina Small Business Program Incentive Grant Awardees, FY 2024:
Under the FY 2024 Incentive Program Solicitation, companies were eligible for Incentive awards equal to 50% or 75% of expenses incurred in composing their SBIR/STTR applications, up to $12,000.

- **5Metis, Inc., of Durham:** $5,900.00
- **A&M Consulting LLC, of Morrisville:** $299.54
- **Advanced Materials Manufacturing, LLC, of Raleigh:** $7,290.50
- **Aegis Power Systems, Inc., of Murphy:** $12,000.00
- **Akalaka Co., of Durham:** $1,500.00
- **American Droid LLC, of New Bern:** $661.88
- **Antixero, LLC, of Raleigh:** $3,000.00
- **Atlantic Fish Corporation, of Raliegh:** $7,454.92
- **Atom Bioworks Inc., of Cary:** $4,782.58
- **BioKier, Inc., of Chapel Hill:** $11,848.36
- **BIOMILQ, Inc., of Durham:** $4,584.51
- **BioMojo, LLC, of Cary:** $11,293.63
- **BluEyeQ, LLC, of Charlotte:** $2,581.89
- **Brighton Development, LLC, of Cary:** $6,111.00
- **Brilliant Aerospace LLC, of Greensboro:** $10,920.00
- **Calidar, Inc., of Durham:** $7,927.08
- **Calla Health Foundation, of Durham:** $12,000.00
- **CN-Seamless Inc., of Raleigh:** $3,920.88
- **Coprata, of Durham:** $4,798.42
- **Cosmic Eats, Inc., of Cary:** $4,531.95
- **Cydoc Corporation, of Durham:** $3,000.00
- **Drakeford, Scott, & Associates, LLC, of Durham:** $1,484.78
- **Ecobot, Inc., of Asheville:** $4,310.05
- **EMF Disturbance Monitors, of Cary:** $5,687.50
- **EMP Consulting Services, of Taylorsville:** $8,733.75
- **ExstoBio Inc., of Chapel Hill:** $5,856.01
- **Geometric Data Analytics, Inc., of Durham:** $6,059.00
- **GreenLifeTech Corporation, of Banner Elk:** $11,662.50
- **Haw River Mushrooms LLC, of Graham:** $4,200.00
- **Helixomer, Inc., of Hillsborough:** $4,084.62
- **IngateyGen LLC, of Durham:** $12,000.00
- **Innovative Viral Solutions, of Leland:** $437.50
- **Knooosc, Inc., of Atlantic Beach:** $156.25
- **LiRA Inc., of Chapel Hill:** $12,000.00
- **Mucommune, LLC, of Durham:** $11,472.18
- **NextGen Interactions LLC, of Raleigh:** $9,189.34
- **Phase, Inc., of Corneilius:** $3,444.00
- **Precion, Inc., of Morrisville:** $2,500.00
- **Protochips, Inc., of Morrisville:** $2,832.06
- **Scion Neurostim, Inc., of Durham:** $9,000.00
- **Sediment, LLC, of Greensboro:** $12,000.00
- **Smart Material Solutions, LLC, of Raleigh:** $4,455.03
- **Social Cascade, LLC, of Raleigh:** $6,135.82

- **Soelect, Inc., of Greensboro:** $11,025.72
- **Triangle Environmental Health Initiative:** $10,421.30
- **United Protective Technologies, LLC, of Locust:** $8,312.74
- **Vigilant Cyber Systems, Inc., of Mount Airy:** $9,095.98
- **Virati, LLC, of Brasstown:** $12,000.00
- **WaterBros Desal, LLC, of Charlotte:** $2,350.00