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## NASA's Impact in Florida: A Tech Transfer Perspective

*You know that NASA studies our planet, our sun, the solar system, and the Universe. But did you know about the space program's impact here on Earth?*

The Innovative Partnerships Program (IPP) Office at NASA's Kennedy Space Center is dedicated to forming partnerships that can positively contribute to—and benefit from—NASA's research and development (R&D) and technology innovations. Read on to learn more about the IPP-driven impacts of NASA in Florida.

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### Small Business Innovation Research/Small Business Technology Transfer

NASA's SBIR/STTR Program provides an opportunity for small high-tech companies (500 employees or less) to participate in NASA-sponsored R&D efforts in key technology areas. In STTR projects, the small business collaborates with a research institution, such as a university.

Since 2000, NASA's SBIR/STTR Program has invested **\$27.6 million** in Florida's small high-tech companies.

These Florida businesses recently received NASA SBIR/STTR contracts.

Company	Florida location	Company	Florida location
Accellogic	Weston	Mnemonics, Inc.	Melbourne
Advanced Engineering Solutions	Ormond Beach	New Era Technology, Inc.	Gainesville
Advanced Materials Technology, Inc.	Tampa	New Span Opto-Technology, Inc.	Miami
Advanced Technologies Group, Inc.	Stuart	OptiGrate Corporation (formerly Light Processing & Technologies, Inc.)	Orlando
Aeronix, Inc.	Melbourne	Prioria, Inc.	Gainesville
Advanced Power Electronics Corporation (ApECOR)	Orlando	RINI Technologies, Inc.	Oviedo
Design Interactive, Inc.	Oviedo	Sol-gel Solutions, LLC	Gainesville
DMD Concepts, LLC	Rockledge	Soneticom, Inc.	West Melbourne
Eclipse Energy Systems, Inc.	St. Petersburg	Streamline Numerics, Inc.	Gainesville
Florida Turbine Technologies, Inc.	Jupiter	Summation Research, Inc.	Melbourne
Keystone Synergistic Enterprises, Inc.	Port St. Lucie	Tai-Yang Research Company	Tallahassee
Mainstream Engineering Corporation	Rockledge	Theseus Logic, Inc.	Orlando
Maracel Systems & Software Technologies, LLC	Crestview	United Materials & Systems, Inc.	Orlando
		Zyberwear, Inc.	Ocoee

#### IPP Funds Phase 3 Contract for Soneticom, Inc.

Based in West Melbourne, Florida, Soneticom is testing its innovative precision geo-location system, developed with SBIR funding. After having successfully completed Phase 1 (6 months, proof of concept) and Phase 2 (2 years, prototype) SBIR contracts, the company now is collaborating with Kennedy on a project to monitor radio frequency (RF) activity at Kennedy. The goal of the project is to identify "hot spot" areas that might be detrimental to sensitive payloads and equipment and to characterize patterns of RF activity. By serving as an early detection system, this technology is expected to safeguard RF-sensitive hardware being transported across the Kennedy campus.



More information on the SBIR/STTR Program is available online <http://sbir.nasa.gov>

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## Spinoffs and Other Licenses

Innovative technologies from NASA missions can be used in other ways that benefit society. Therefore, NASA is committed to “spinning off” its innovations into new products—as well as to providing access to its technologies, facilities, and expertise. Here are just a few of the Florida organizations that are using technology from NASA’s Kennedy Space Center.

Florida Organization	Use of Kennedy Technology
<b>American Remote Vision Company</b> , Titusville	Brought ultrasonic bolt tension gauge to the marketplace as the SureBolt™ system
<b>Armor Forensics</b> , Jacksonville	Applied technology for measuring hailstorm damage to the space shuttle’s external tank to crime scene investigations
<b>Command and Control Technologies</b> , Titusville	Licensed International Space Station control monitor unit for commercial applications in aerospace and other mission-critical systems
<b>DM2 Research and Design</b> , Merritt Island	Licensed ISO 9000 Web interactive training to help consulting clients improve their business strategies
<b>Technical Applications Unlimited</b> , Cape Canaveral	Applied space shuttle contamination monitor to semiconductor manufacturing, clean rooms, pharmaceutical production, food processing, motion detection, and more

SureBolt is a trademark of American Remote Vision Company.

## STTR-Funded “Green” Technology Benefits Florida and the Nation

Researchers at Kennedy and the University of Central Florida (UCF) developed the award-winning Emulsified Zero-Valent Iron (EZVI) technology under NASA’s STTR Program and with support from other federal agencies and Atlanta-based GeoSyntec Consultants. EZVI uses iron particles in an environmentally friendly oil and water base to neutralize toxic chemicals. Kennedy’s IPP Office has licensed the technology to eight companies. EZVI has been used to treat trichloroethylene (TCE) and perchloroethylene (PCE) contamination in Florida and other states.



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## Partnerships

Forming partnerships that add value to NASA is essential for the success of the space program. These alliances allow NASA to achieve its mission ambitions faster. And by combining our resources with those of our partners, we can more efficiently realize our own goals as well as those of our partners. The following Florida companies currently have partnerships with Kennedy.

**Evergreen Performance and Compliance, Inc.**, Jacksonville  
Kennedy and Evergreen are collaborating on a project to further develop a NASA-patented filtering technology, to be used in flues at coal, oil, and natural gas power plants as well as in NASA’s extravehicular mobility units for space exploration. Evergreen is conducting research to determine whether this technology can be used as a low-power, highly efficient method for removing carbon dioxide for fossil-fuel combustion industry and NASA applications.

**BCS Life Support, LLC**, Edgewater  
BCS Life Support has partnered with Kennedy to develop two technologies: (1) a method for the efficient storage of cryogenic liquid air by minimizing premature nitrogen boil off and subsequent oxygen enrichment of the fluid and (2) a method to extract cryogenic air from a portable storage vessel regardless of physical attitude. These two innovations eventually might help to expand liquid air’s use in the emergency response industry and will meet National Institute of Occupational Safety and Health (NIOSH) standards. Results of the Kennedy-BCS collaboration also are expected to provide more efficient air storage for emergency workers at Kennedy.

**University of Central Florida**, Orlando  
Researchers at the University of Central Florida are collaborating with NASA to assemble and test prototype thermal switches that use low-temperature shape-memory alloys. These materials change shape in response to external temperature changes, which allows them to serve as both a sensor and an actuator. Switches made with the innovative alloys could be used in thermal control systems during day/night cycles on the lunar surface.

**Florida Solar Energy Center**, Cocoa  
This research institute of the University of Central Florida plans to test how dust-mitigation technologies that are incorporated into a solar panel system will affect the system’s optical properties and solar cell efficiency. Researchers also will study the materials compatibility of the technologies, developed in Kennedy’s Electrostatics and Surface Physics Lab.

**Sharklet Technologies, LLC** (Alachua)  
Sharklet Technologies is working with Kennedy to test the company’s novel engineered surface pattern to determine whether it can help protect against microbes commonly found in NASA spacecraft environmental control and life support systems. Thermoplastic and metallic surfaces that combine Sharklet’s surface topography with antimicrobial agents have been shown to withstand a broad spectrum of bacteria, fungi, and algae. Under the partnership, tests will examine the materials’ antimicrobial efficacy in reduced-gravity environments against a wider range of pathogens.