



Purposes of the SBIR & STTR Programs

<http://www.sbir.gov>



Stimulate technological innovation

Use small businesses to meet federal research and development needs

Encourage participation in innovation and entrepreneurship by minority and disadvantaged persons

Foster technology transfer through cooperative R&D between small businesses and research institutions

Increase private-sector commercialization of innovations derived from Federal research and development funding



How the SBIR & STTR Programs are Structured at NASA



<http://sbir.nasa.gov>

SBIR

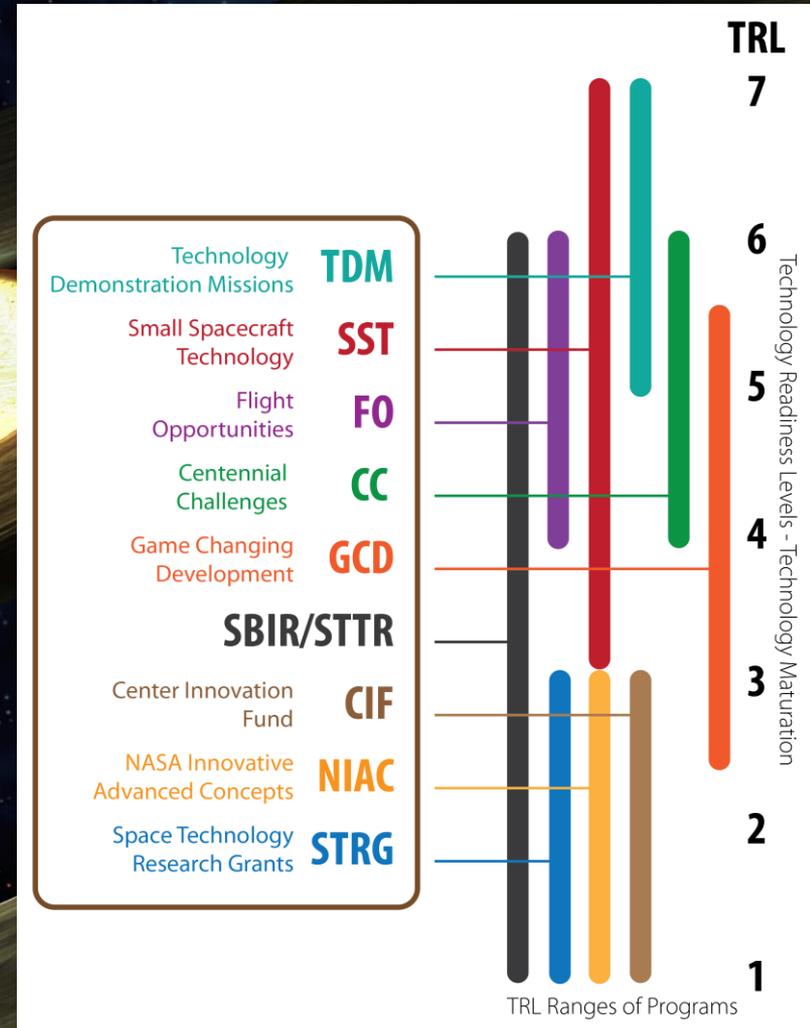
Topics/Subtopics developed to support the needs of NASA's Mission Directorates – Science, Human Exploration & Operations, Aeronautics Research

STTR

Topics/Subtopics developed to support mid- to long-term technology development needs identified in NASA's "Space Technology Roadmaps" or the National Aeronautics R&D Plan

NASA Centers Play Critical Role

All SBIR/STTR projects are managed at one of NASA's 10 Centers – home to NASA's development projects, research facilities, and Subject Matter Experts





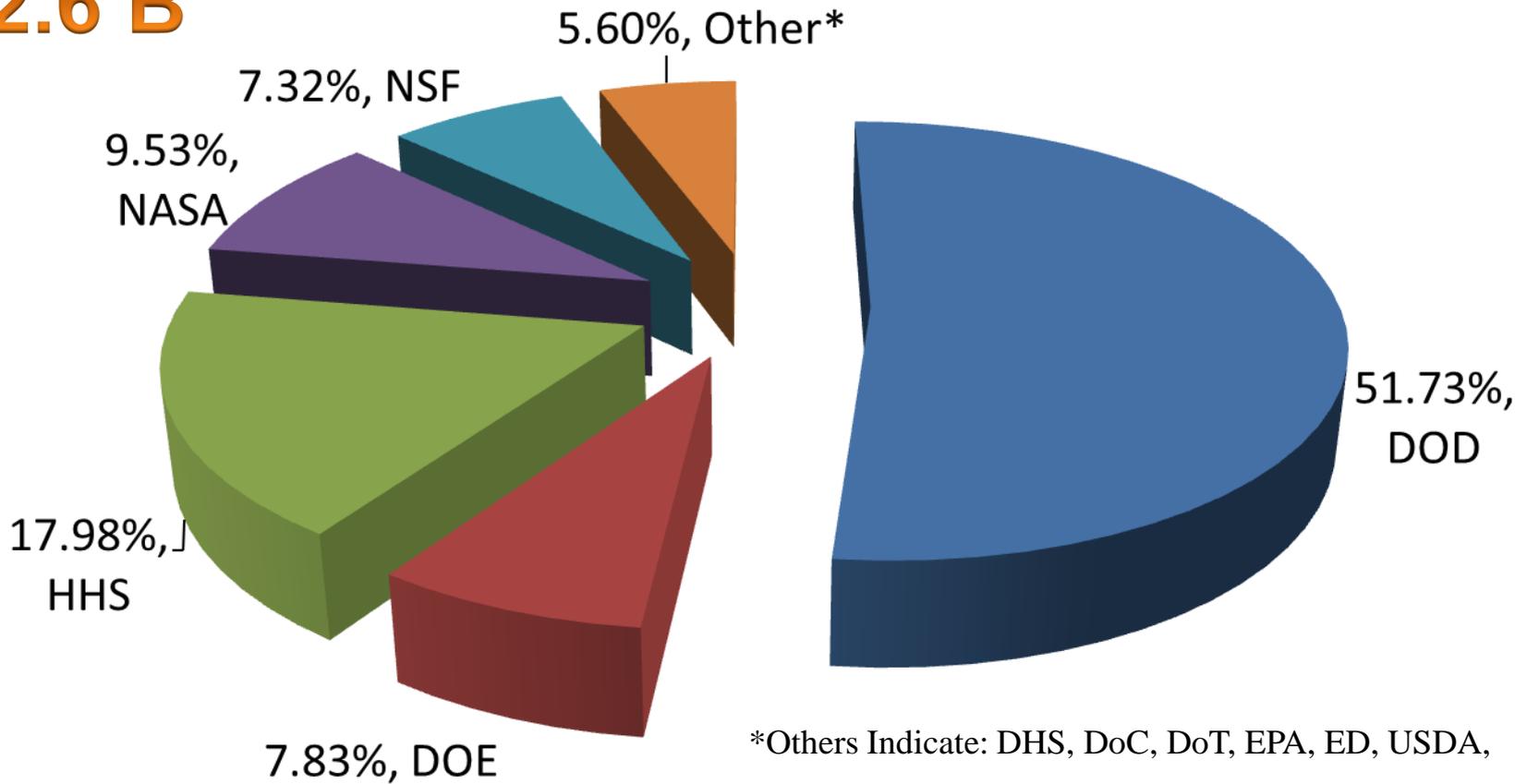
NASA's annual funding for SBIR and
STTR Programs is approximately **\$150**
per year.





SBIR/STTR Agency Funding FY2011

~2.6 B

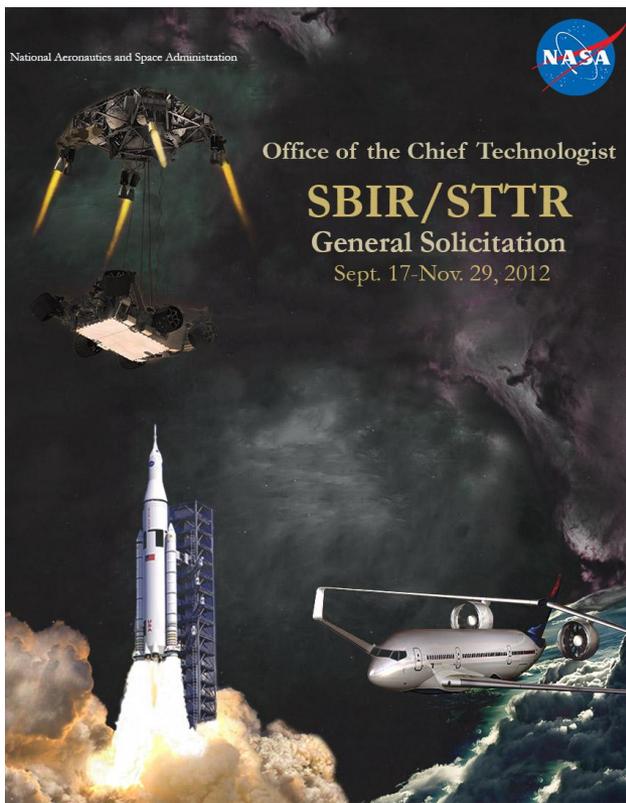




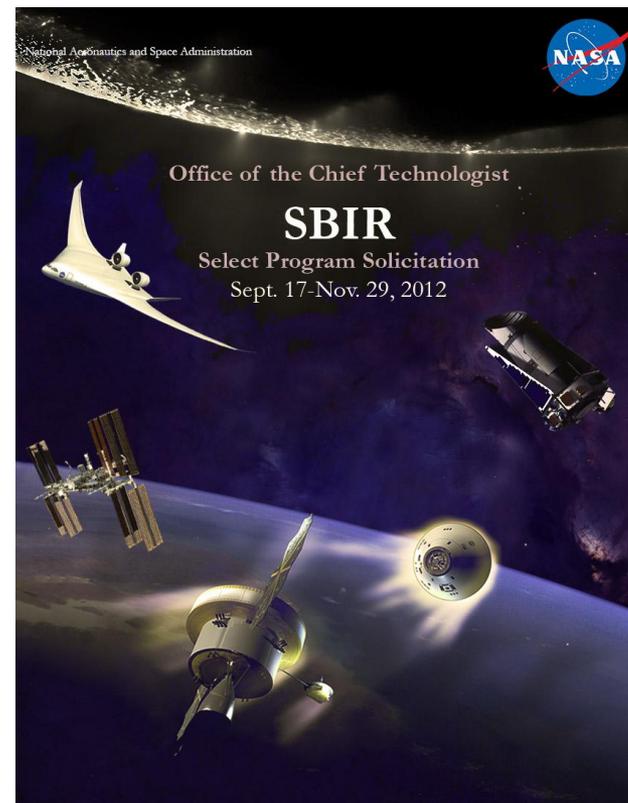
2012 General & Select Solicitations



SOLICITATION CLOSES NOVEMBER 29
Next Solicitation November 2013

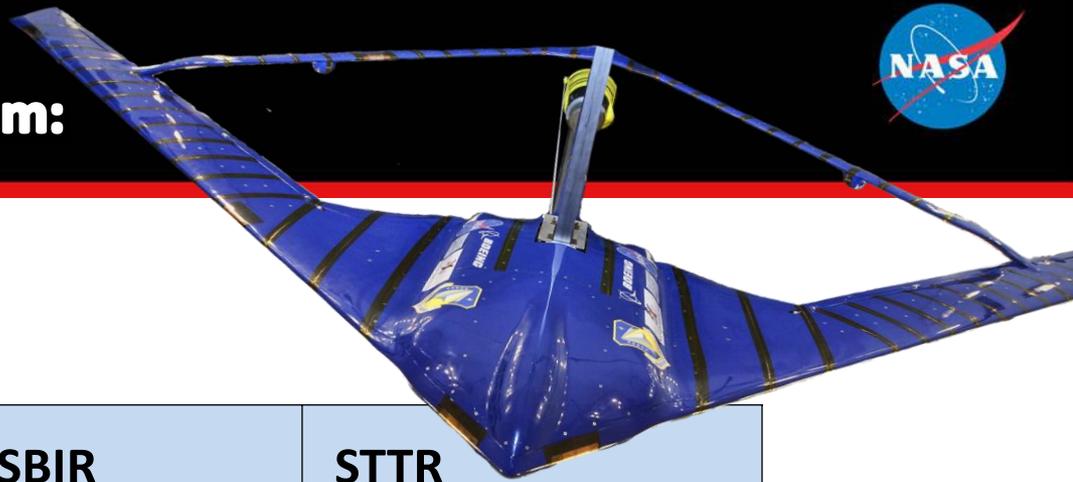


SBIR/STTR General Solicitation



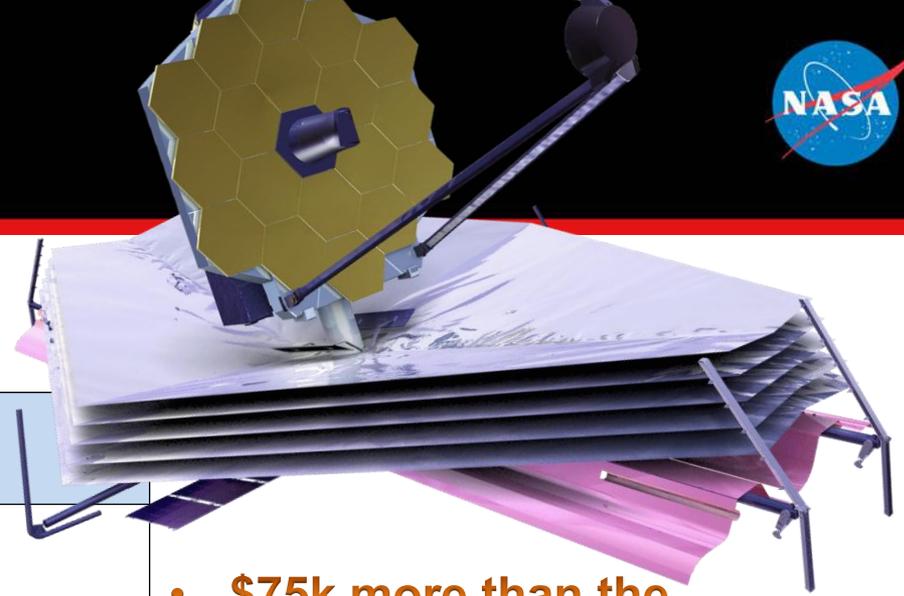
SBIR Select Solicitation

SBIR/STTR General Three Phase Program:



Phase I Contracts	SBIR	STTR
Maximum Contract Value	\$125,000	\$125,000
Period of Performance	6 months	12 months
Phase II Contracts	SBIR	STTR
Maximum Contract Value	\$750,000	\$750,000
Period of Performance	24 months	24 months

SBIR Select Three Phase Program:



Select Phase I Contracts	SBIR
Maximum Contract Value	\$200,000
Period of Performance	6 months
Select Phase II Contracts	SBIR
Maximum Contract Value	\$1,500,000
Period of Performance	24 months

- **\$75k more than the SBIR/STTR Phase I Contract Value**
- **\$\$ is double that of the SBIR/STTR Phase II Contract Value**

Only Small Business Concerns (SBC) are invited to submit proposals.



SBIR/STTR General Three Phase Program:



Phase II-Enhancement (II-E)

	Minimum non-SBIR/STTR Funding Required for Eligibility for Matching in Phase II-E	Corresponding SBIR/STTR Program Contribution	Anticipated Period of Additional Performance
Phase II-E	\$25,000	\$25,000	6-12 Months
	Maximum non-SBIR/STTR Funding to be Matched by SBIR/STTR Program in Phase II-E	Corresponding SBIR/STTR Program Contribution	Anticipated Period of Additional Performance
	\$125,000	\$125,000	6-12 Months

Phase II-eXpanded (II-X)

	Minimum Funding Required from non-SBIR/STTR NASA Source for Eligibility for Matching in Phase II-X	Corresponding SBIR/STTR Program Contribution	Anticipated Period of Additional Performance
Phase II-X	\$75,000	\$150,000	12-24 Months
	Maximum Funding Amount from non-SBIR/STTR NASA Source to be Matched in Phase II-X	Corresponding SBIR/STTR Program Contribution	Anticipated Period of Additional Performance
	\$250,000	\$500,000	12-24 Months

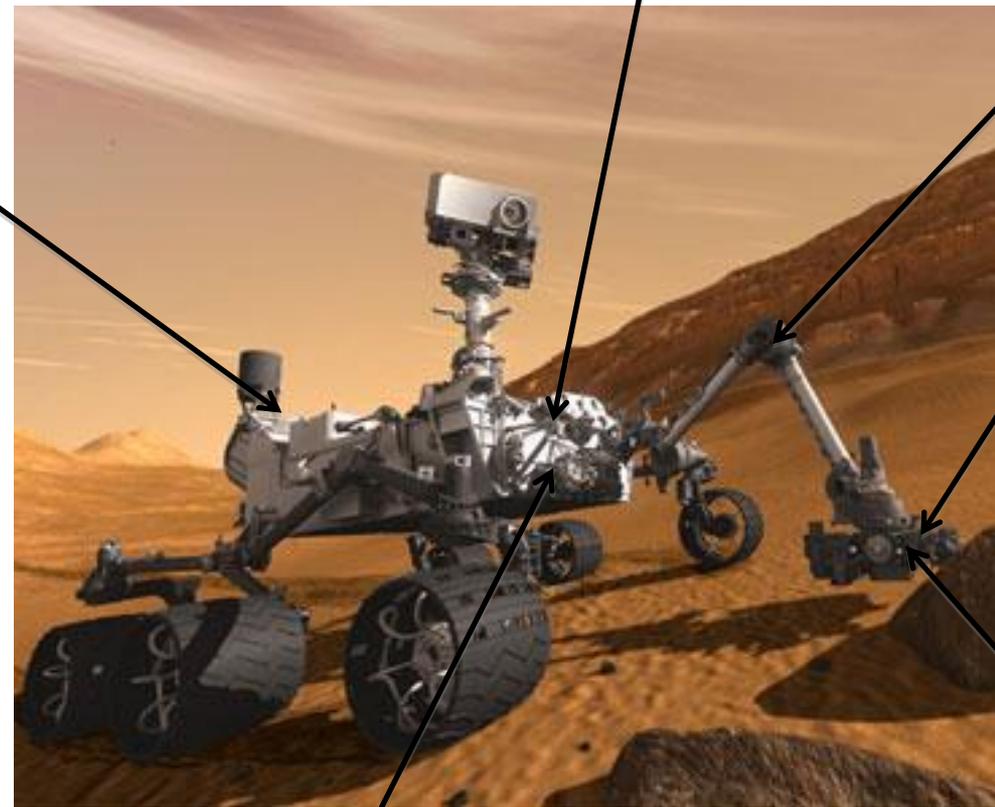


Key Successes – Curiosity Rover

Yardney Technical Products, Pawcatuck, CT
Lithium ion batteries

Creare, Hanover NH
Space-qualified vacuum pump

Starsys Research, Boulder, CO
Gearboxes for robotic arm



Honeybee Robotics, NY, NY
Dust removal tool

Grammatech, Ithica NY -
Software for rover operations

inXitu, Campbell, CA
Chemistry and Mineralogy experiment (CheMin) instrument



NASA Small Business in the Press



NASA gung-ho about small business

Oliver St. John, USA TODAY

Comments Share



(Photo: Honeybee Robotics)

11:22PM EDT October 9, 2012 - You don't have to be a giant like Lockheed Martin or Boeing anymore to make out-of-this-world stuff for space missions.

That's because small businesses are no longer being treated like so much space dust by the federal government. There's a new recognition that small businesses are innovation hubs and can turn around space jobs more quickly for less cash. Perhaps that's why NASA has surpassed its annual small-business contracting goal by over 28%, spending \$2.6 billion on small-business contracts.

STORY HIGHLIGHTS

- NASA has surpassed its annual small-business contracting goal by over 28%
- Tech developed by small businesses played "significant role" in Mars Curiosity mission, says NASA
- NASA program raises rewards for small-business innovation in select topics up to \$1.5 million

Honeybee Robotics, for example, is a small space technology company of about 40 employees based in Manhattan. On its resumé: a sample storage system that acts as a robotic lab assistant for the Mars Curiosity Rover, which landed in August, as well as a robotic dust-removal tool to brush off Martian rock samples.

"We have a very lightweight overhead system that allows us to be agile, flexible, and maneuver quickly to customer needs," says Honeybee President Kiel Davis. The "behemoths" that get the bulk of NASA contracts are "very expensive. They're slow, and there's a lot of bureaucracy," he says.

"Sources of Innovation"

Now more than ever, small businesses have a crack at working with NASA. Sept. 17, NASA raised the stakes on its Small Business Innovation Research program, or SBIR, adding higher rewards for small businesses developing concepts or prototypes in areas of space technology.

ADVERTISEMENT

EVERYTHING I NEED FOR A SUCCESSFUL DAY.

Lots of amenities. Lots of space.

by ChoiceHotels.com

Book Now

Amenities vary by location.

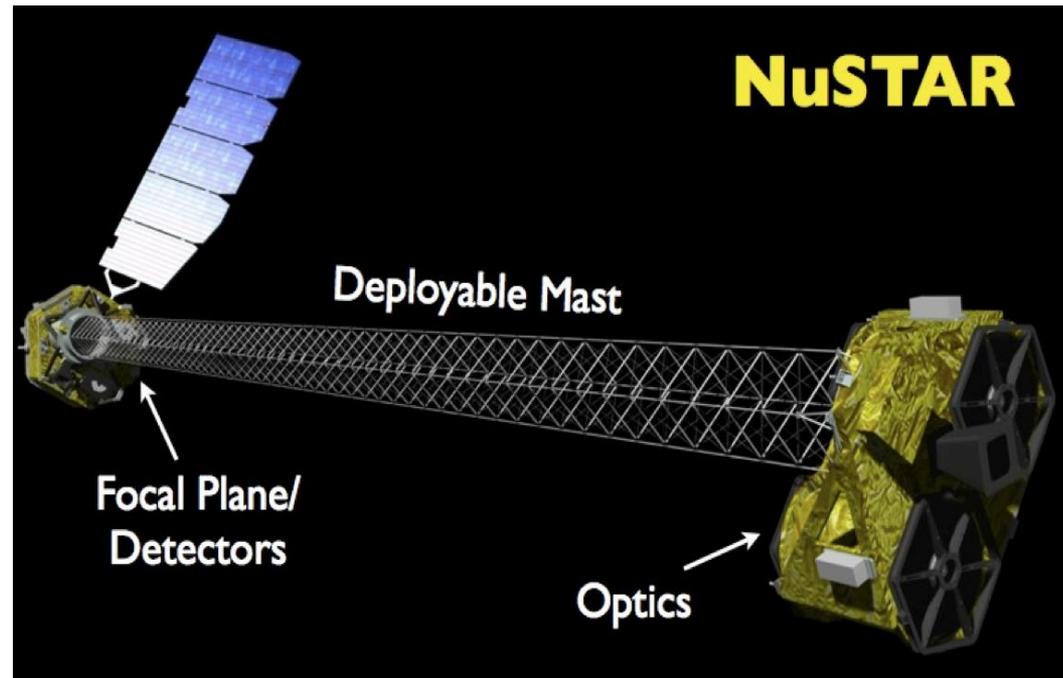


Key Successes – NuStar



"NuSTAR will help us find the most elusive and most energetic black holes, to help us understand the structure of the universe"

-Fiona Harrison, NuSTAR principal investigator



AEC-Able Engineering Company developed a 10 meter long boom for the Nuclear Spectroscopic Telescope Array (NuSTAR). The boom supports key focusing elements of the high energy X-ray observatory.

NuSTAR, a NASA SMD SMEX mission, successfully deployed the first focusing telescopes to image the sky in the high energy X-ray region of the electromagnetic spectrum on June 13, 2012 with the boom following on June 21, 2012.

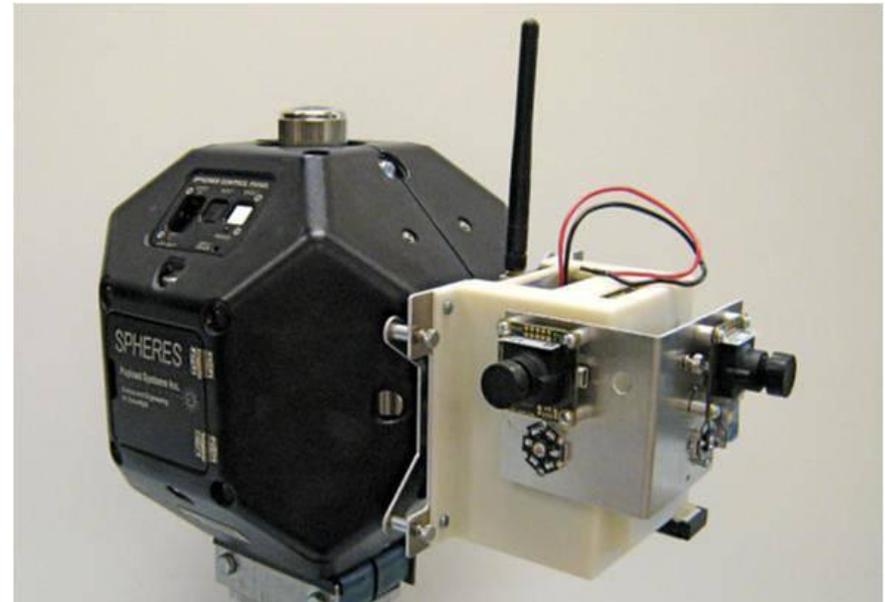
Key Successes - SPHERES



"The tests that we are conducting with Smart SPHERES will help NASA make better use of robots as assistants to and versatile support for human explorers -- in Earth orbit or on long missions to other worlds and new destinations"

-Terry Fong, Project Manager of the Human Exploration Telerobotics project and Director of the Intelligent Robotics Group (Ames)

Aurora Flight Sciences Corp. – receives Phase III funding in July 2012 to further develop the Synchronized Position Hold, Engage, Reorient, Experimental Satellites (SPHERES). These are bowling-ball sized spherical satellites that are used inside the space station to test a set of well-defined instructions for spacecraft performing autonomous rendezvous and docking maneuvers.





Key Successes - SPHERES



[video]

NASA SBIR/STTR Economic Impact

http://www.nasa.gov/offices/oct/partnership/economic_impacts.html



National Aeronautics and Space Administration



NASA's Impact in Ohio: 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 economic impact here on Earth?



In 2011, NASA invested nearly **\$270 million** in the state of Ohio.

Since 2001, NASA's SBIR/STTR Program has invested almost **\$40 million** in **51 Ohio companies** and more than **\$1.2 billion** nationwide.

How NASA's SBIR/STTR Program Benefits Ohio

NASA is committed to moving technologies and innovations into the mainstream of the U.S. economy, and the Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) program helps fulfill this goal.

SBIR/STTR stimulates technological innovation by encouraging small, high-tech companies—particularly minority and disadvantaged businesses—to partner with NASA to help meet its research and development needs in key technology areas. At the same time, this program strengthens small companies by enabling them to bring cutting-edge new products into the U.S. economy.

The list to the right highlights Ohio businesses that received SBIR/STTR contracts from NASA since 2001. (Visit <http://sbir.nasa.gov> for more information on the SBIR/STTR program.)

NASA SBIR/STTR Companies in Ohio

A&P Technology	Cincinnati
ADMA Products, Inc.	Hudson
Advanced Coatings International	Akron
Alphaport, Inc.	Cleveland
AP Solutions, Inc.	Brookpark
Applied Sciences, Inc.	Cedarville
BIOMEC, Inc.	Cleveland
Cleveland BioLabs, Inc.	Cleveland
Cognitive Systems Engineering, Inc.	Ostrander
Cornerstone Research Group, Inc.	Dayton
Eclipse Computing, Inc.	Dayton
Energy Focus, Inc.	Solon
Essential Research, Inc.	Cleveland
General Nano, LLC	Cincinnati
Genvac AeroSpace, Inc.	Cleveland
H-Cubed, Inc.	Olmsted Falls
Hyper Tech Research, Inc.	Columbus
Innovative Scientific Solutions, Inc.	Dayton
Iten Industries	Ashtabula
KJB Consultants	Strongsville
Lake Shore Cryotronics, Inc.	Westerville
Lambda Technologies	Cincinnati
Modern Computational Technologies, Inc.	Cincinnati
N&R Engineering	Cleveland
Nastec, Inc.	Brook Park
NexTech Materials, Ltd.	Lewis Center
NTI, Inc.	Fairborn
Orbital Research, Inc.	Cleveland
Pentallin Corporation	Findlay
pH Matter, LLC	Columbus
PHPK Technologies	Columbus
Powdermet, Inc.	Euclid
RHAMM Technologies, LLC	Beilbrook
RNET Technologies, Inc.	Dayton
SeniArTech, Inc.	Columbus
Seal, Inc.	Middleburg Hts.
Sierra Lobo, Inc.	Fremont
Spectra Research, Inc.	Dayton
Spectral Energies, LLC	Dayton
Sun Valley Technology	Warrensville Hts.
Suppower, Inc.	Athens
SynGenics Corporation	Delaware
Syscom Technology, Inc.	Columbus
Taltech, Inc.	Bevercreek
TechLand Research, Inc.	North Olmsted
Technology Management, Inc.	Cleveland
Teraphysics Corporation	Cleveland
UES, Inc.	Dayton
WebCore Technologies, LLC	Miamisburg
Wright Materials Research Company	Beavercreek
ZIN Technologies, Inc.	Middleburg Hts.



www.nasa.gov

How NASA Spinoffs Benefit Ohio



Coatings Extend Jet Engine Life and Protect Steel Structures (Euclid)

A NASA scientist's groundbreaking work in thermal barrier coatings has led to advanced coating techniques that enhance jet engine performance, improve fuel economy, and increase component life by 50 percent. The groundbreaking technology, developed and commercialized by MesoCoat, Inc., also offers an environmentally friendly method for extending the maintenance life of steel structures, such as oil and gas pipes, bridge beams, ships, water pipes, and mining equipment.



SBIR Partnership Strengthens Orthopedic Implants (Cincinnati)

Low plasticity burnishing (LPB), a process developed to extend the life of metal components on aging aircraft, is now being used to strengthen and enhance orthopedic implants. NASA funding helped Lambda Technologies develop LPB processes that have increased the fatigue life of more than 3,400 hip implants. LPB increases the life span of hip implants by over 100 times, reducing the need for costly and time-consuming replacements.



Durable Patch Allows For Quick Repairs (Dayton)

CRG Industries, LLC has created tough, reusable patches that enable quick repairs on cars, trucks, and outdoor recreational equipment. NASA funded the design of a lightweight, moldable material to assist astronauts in making repairs on the International Space Station. The patches are now helping campers, boaters, vacationers, and adventurers when they need an emergency, temporary structural patch, and they enable quick repairs on damaged motor vehicles.



Partnership Enables More Efficient Wind Energy (Miamisburg)

Through a NASA SBIR contract, A&P Technology has adapted lightweight, high-strength composite materials to help create lighter, larger, and more efficient wind turbine blades. A&P's fiber-reinforced foam sandwich panel can also be used for a wide variety of industrial and consumer applications; e.g., developing lighter weight, higher strength vehicles, cargo shipping containers, military shelters, manhole covers, and more.



Light Filter Improves Medical Imaging (Westerville)

Lake Shore Cryotronics, Inc. partnered with NASA to create robust infrared optical filters that enable scientists to peer into the universe without being impeded by cosmic dust clouds. The partnership has since provided Lake Shore Cryotronics with a cross-cutting technology that can be used in other markets, including the growing field of cerebral imaging, opening up new applications in biomedical imaging, security screening, and the detection of explosives.



Liquid-Sensing System Monitors Supercooled Liquids (Fremont)

An innovation originally developed for monitoring supercooled liquids on NASA rockets and space systems is now benefiting companies that routinely use or store cryogenics. Sierra Lobo, Inc., a small, minority-owned enterprise, has patented a system that accurately measures the fluid level and temperature profiles of liquid helium, hydrogen, nitrogen, and oxygen. The NASA-derived technology enables more efficient monitoring of cryogenic liquids in the medical, metals processing, and semiconductor manufacturing industries.



NASA actively seeks partnerships with U.S. companies that can license NASA innovations and create "spinoffs" in areas such as health and medicine, consumer goods, transportation, renewable energy, and manufacturing. When businesses leverage NASA technologies to develop new products, it not only benefits the regional economy, but significantly strengthens the nation's competitiveness in the global marketplace.

NASA's centers across the country—including Glenn Research Center in Ohio—have helped 79 Ohio companies develop revolutionary spinoff technologies.

Learn more about how NASA innovations benefit the public in *Spinoff*, an annual publication that highlights NASA's most significant technology transfer successes. (Available at: <http://www.sti.nasa.gov/tto>)

National Aeronautics and Space Administration

Office of the Chief Technologist
NASA Headquarters
Washington, DC 20546

www.nasa.gov

Publication herein does not constitute NASA endorsement of the product or process, nor confirmation of manufacturer's performance claims related to any particular spinoff development.

- Please visit me at the SBIR/STTR booth
- Please attend the session tomorrow at 10:00am on Working with NASA
- Contact
 - Richard Leshner
 - richard.b.leshner@nasa.gov
 - <http://www.sbir.nasa.gov>