



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

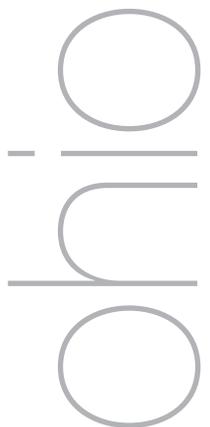
NASA is committed to moving technologies and innovations into the mainstream of the U.S. economy, and the Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) program helps fulfill this goal.

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

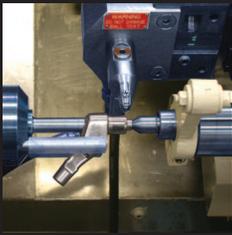
A&P Technology	Cincinnati
ADMA Products, Inc.	Hudson
Advanced Coatings International.....	Akron
Alphaport, Inc.	Cleveland
AP Solutions, Inc.	Brookpark
Applied Sciences, Inc.	Cedarville
BIOMEC, Inc.	Cleveland
Cleveland BioLabs, Inc.	Cleveland
Cognitive Systems Engineering, Inc.	Ostrander
Cornerstone Research Group, Inc.	Dayton
Edaptive 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
Pentalim Corporation.....	Findlay
pH Matter, LLC	Columbus
PHPK Technologies	Columbus
Powdermet, Inc.	Euclid
RHAMM Technologies, LLC	Bellbrook
RNET Technologies, Inc.	Dayton
SenAnTech, Inc.	Columbus
Sest, Inc.	Middleburg Hts.
Sierra Lobo, Inc.	Fremont
Spectra Research, Inc.....	Dayton
Spectral Energies, LLC.....	Dayton
Sun Valley Technology.....	Warrensville Hts.
Sunpower, Inc.	Athens
SynGenics Corporation	Delaware
Syscom Technology, Inc.	Columbus
Taitech, Inc.	Beavercreek
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.





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.



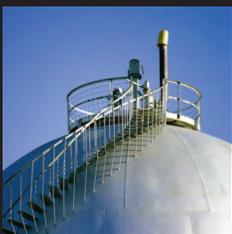
Partnership Enables More Efficient Wind Energy (*Miamisburg*)

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, bridges, cargo shipping containers, military shelters, manhole covers, and more.



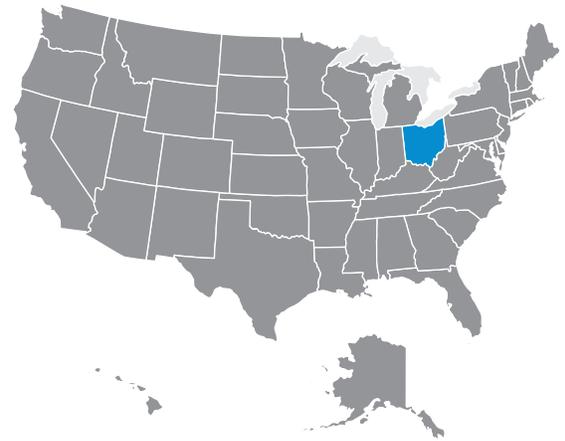
Light Filter Improves Medical Imaging (*Westerville*)

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 terahertz 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 benefitting 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>)

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