



NASA's Impact in Arizona: 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 **\$135 million** in the state of Arizona.

Since 2001, NASA's SBIR/STTR Program has invested over **\$36 million** in **28 Arizona companies** and more than **\$1.2 billion** nationwide.

How NASA's SBIR/STTR Program Benefits Arizona

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 Arizona 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 Arizona

4D Technology Corporation.....	Tucson
AdValue Photonics, Inc.	Tucson
Advanced Ceramics Research, Inc.	Tucson
Advanced Propulsion, Inc.	Tempe
Amsen Technologies, LLC	Tucson
Aonix Advanced Technologies, LLC.....	Tucson
Breault Research Organization, Inc.	Tucson
D&P, LLC.....	Phoenix
Desert Beam Technologies, LLC	Tucson
HOBILabs, Inc.	Tucson
Intertec Advanced Materials, Inc.	Tucson
Jansen's Aircraft Systems Controls, Inc.	Tempe
Latitude Engineering	Tucson
Lite Cycles, Inc.	Tucson
MER Corporation.....	Tucson
NanoTek, Inc.	Tucson
Network Analysis, Inc.	Chandler
NP Photonics, Inc.	Tucson
Paragon Space Development Corporation	Tucson
Physics, Materials, and Applied Mathematics Research, LLC.....	Tucson
Reifer Consultants, Inc.	Prescott
Ridgetop Group, Inc.	Tucson
Scientific Monitoring, Inc.	Scottsdale
Sigma Technologies International, Inc.	Tucson
Sion Power.....	Tucson
SJT Micropower	Fountain Hills
SunDanzer Development, Inc.	Tucson
ZONA Technology, Inc.	Scottsdale

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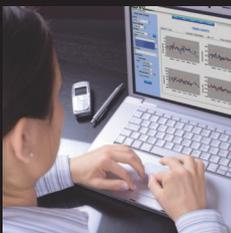
Tail Rotor Airfoil Stabilizes Helicopters and Reduces Noise *(Tempe)*

Using a NASA design as the basis for a new tail rotor airfoil, Van Horn Aviation, LLC (VHA) created an aftermarket tail rotor for the Bell 206 series helicopters. In 2009, the Federal Aviation Administration granted the VHA 206 tail rotor a 5,000-hour lifetime, twice that of the original blade. The updated design limits turbulence that causes noise and drag, providing a 40-percent reduction in the sound produced by helicopters.



Space Suit Technology Protects Deep Sea Divers *(Tucson)*

Paragon Space Development Corporation, a woman-owned small business, has extensive experience in providing life support for extreme environments, including space. Paragon assisted the Navy in developing a commercial diving suit that protects divers from hazardous materials. This innovative design provides space suit-like isolation from hazardous materials while delivering safe breathing air to the diver. Exhaled air is collected by a surface unit that eliminates reintroduction of hazardous agents via the regulator.



Hybrid Modeling Tool Aids Flight Equipment Monitoring *(Scottsdale)*

Through a Small Business Innovation Research (SBIR) contract with NASA, Scientific Monitoring, Inc. developed a streamlined health monitoring tool for flight equipment. The resulting model assesses equipment performance to determine if it is within the expected environmental and operating range. It also enables detection of deterioration or impending failure conditions before failure occurs. Scientific Monitoring has commercialized the model as a commercial health and performance monitoring software product.

NASA Software Licensed as Web-Enabled Tool Set *(Cave Creek)*

The NETMARK, Program Management Tool (PMT), and Query-Based Document Management (QBDM) tools, developed by NASA, have supported \$1 billion worth of NASA projects. NETMARK integrates information across documents and databases. PMT helps project managers monitor, disseminate, and track milestones and resources. QBDM enables content or context searches across databases. In 2006, the tools were licensed to JumpStart Solutions, LLC for use in its own Web-enabled tool set.

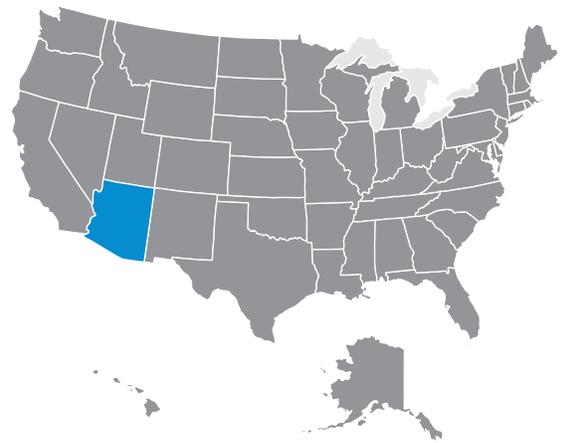
Studying Polymers in Space Improves Lenses on Earth *(Mesa)*

Paragon Vision Sciences, Inc., a manufacturer of gas permeable contact lenses, wanted to improve its polymerization process and reduce convection that occurs from uneven heating in the reaction mixture. Paragon and NASA designed three experiments to be conducted aboard the space shuttle. The results enabled Paragon to develop an improved ground-based polymer manufacturing process that yielded new and better polymers for use in treating vision problems.

Monthly Reports
Managers fill in their monthly status of their tasks.

Task Plans
Managers are able to report the fiscal year's plan. Admins can view and analyze tasks.

Budget Reports
Managers are able to report the fiscal year's actual budget.



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 have helped 117 Arizona 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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