



NASA's Impact in Mississippi: 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 **\$240 million** in the state of Mississippi.

Since 2001, NASA's SBIR/STTR Program has invested over **\$4 million** in **9 Mississippi companies** and more than **\$1.2 billion** nationwide.

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How NASA's SBIR/STTR Program Benefits Mississippi

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 Mississippi 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 Mississippi

Cook's Advanced Energy Conversion, LLC...	Starkville
Geospatial Insights, Inc.....	Stennis Space Center
Innovative Imaging and Research.....	Stennis Space Center
Mississippi Ethanol, LLC.....	Winona
NVision Solutions, Inc.....	Bay St. Louis
Optimal, LLC.....	Starkville
SemiSouth Laboratories, Inc.....	Starkville
Technological Services Company.....	Clinton
WorldWinds, Inc.....	Stennis Space Center



How NASA Spinoffs Benefit Mississippi



Robots Save Soldiers' Lives and Prepare for the Moon (Choctaw)

NASA has designed a mobile communications platform that will enable robots to communicate with one another, astronauts, and mission controllers on Earth during exploration of the Moon, Mars, and beyond. NASA also intends for these rovers to act as relay points for a universal wireless communications network during such missions. NASA chose the low-cost Multi-function Agile Remote Control Robots (MARCbots) that the U.S. Army used in Iraq to help soldiers search for improvised explosive devices and tested their new lunar network using modified MARCbots. Through a partnership with the Von Braun Center for Science and Innovation, NASA awarded the manufacturing contract for these modified robots to Applied Geo Technologies, Inc., a tribally-owned corporation in Choctaw.



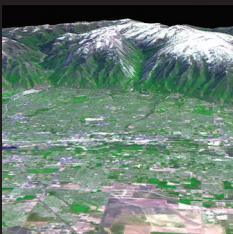
Web-Based Mapping Puts the World at Your Fingertips (Picayune)

In 1978, NASA developed its Earth Resources Laboratory Applications Software (ELAS) to process satellite and airborne sensor imagery data of the Earth's surface. Many companies have used this award-winning technology as the basis for innovative products, and DATASTAR, Inc., of Picayune, is the latest to use ELAS as the basis for their new image processing and analysis software. Designed to manipulate remotely sensed imagery data, DATASTAR's product is available in both computer-based and Web-based versions. The Web-based version is sized to accommodate hundreds of simultaneous users. Both versions of the product can take complicated sets of data and integrate them into clear and useful aerial maps that include soil, subsurface vegetation, and elevation data.



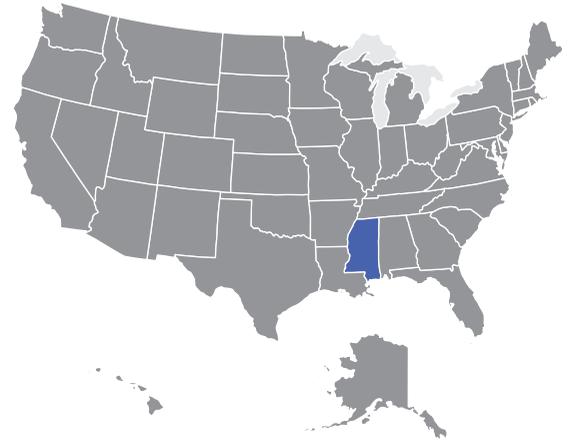
Plants Purify Air and Water for Indoors (Picayune)

In the 1960s, Bill Wolverton, a NASA engineer, began to research the Earth's natural ability to clean itself. This research led Wolverton to replace NASA's traditional septic system with water hyacinths. Next he improved air quality on Skylab, moving live plants onboard. Plants emit water vapor that pulls contaminated air around a plant's roots where it is converted into food. The more air that circulates through the roots, the more effective the plant is at cleaning polluted air. NASA also used Wolverton's research with its BioHome, an experiment in a closed ecological life support system. Wolverton later founded Wolverton Environmental Services, Inc., in Picayune, an environmental consulting firm that provides customers with access to his cutting-edge bioremediation research.



Remote Sensing for First Responders and Farmers (Bay St. Louis)

NVision Solutions, Inc., a small, minority- and woman-owned business in Bay St. Louis, used NASA's geospatial satellite information to assist emergency personnel and farmers. NVision developed the Real-time Emergency Action Coordination Tool (REACT) through a dual-use contract with NASA and local government. City officials accessed maps, reports, real-time sensors, shelter and hospital information, and dynamically generated environmental models to help make decisions during a crisis. With the help of two SBIR contracts, NVision gave farmers access to NASA's precision agricultural algorithms and maps, providing data on crop health, cost reports, and treatment benefits for the requested area. Via a partnership with NASA and the Future Farmers of America, NVision produced an educational geospatial-based agricultural application to show students how geospatial technology can help them farm effectively. The free software was distributed online to over 1,000 students.



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 Stennis Space Center in Mississippi—have helped 8 Mississippi 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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