National Aeronautics and Space Administration

NASA's Impact in Oklahoma: 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 over **$13 million** in the state of Oklahoma.

Since 2001, NASA's SBIR/STTR Program has invested nearly **$700,000** in **Oklahoma** and more than **$1.2 billion** nationwide.

How NASA's SBIR/STTR Program Benefits Oklahoma

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 an Oklahoma business that received an SBIR/STTR contract from NASA. **(Visit http://sbir.nasa.gov for more information on the SBIR/STTR program.)**

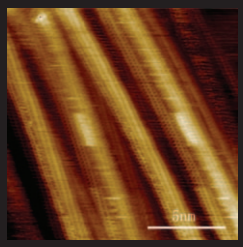
NASA SBIR/STTR Company in Oklahoma

SouthWest NanoTechnologies, Inc. ..... Norman

Oklahoma

OKLAHOMA

How NASA Spinoffs Benefit Oklahoma



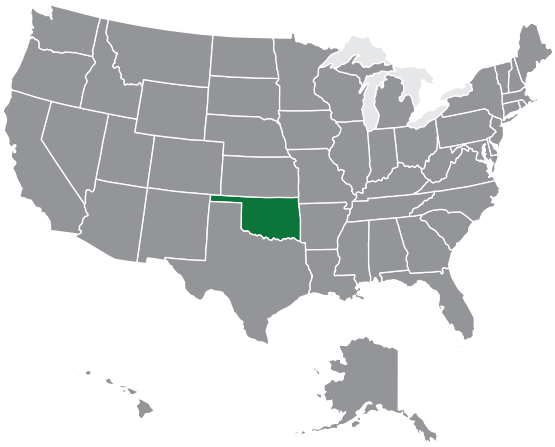
NASA-Enabled Method Enhances Nanotube Quality and Production, Reduces Costs *(Norman)*
SBIR funding enabled SouthWest NanoTechnologies, Inc. (SWeNT) to develop a new production method that increased the quality and production capacity of its carbon nanotubes while lowering costs tenfold. SWeNT now controls nanotube synthesis to selectively grow customized nanotubes and avoids an expensive, time-consuming sorting process. The company is working with aerospace and nanomaterials clients to produce advanced body armor, ultra-conductive wiring, chemical sensors, and low-energy lighting products. The collaboration earned SWeNT NASA's Tibbetts Award for excellence in SBIR program achievement.

Automotive, Railway, and Airline Industries Benefit from Lubricant Coating Process *(Seminole)*
A NASA-developed technique is the key element in Techniblast Company's process for applying high-strength solid lubricants. NASA developed its "peen plating" process for applying molybdenum disulfide to reduce wear on aerospace materials operating in harsh environments. The technique creates microscopic surface indentations, forming tiny pockets of lubrication that promote high energy bonding. The process increases material strength and reduces stress corrosion. Techniblast has adapted the process for commercial use in the automotive, railway, airline, metal fabrication, and petroleum industries.

Space Technology Helps Insulate Homes, Reduce Heating and Cooling Costs *(Oklahoma City)*
Smart-House Consultants, Inc., now Guaranteed Watt Saver Systems, Inc. (GWS) adapted a NASA technology designed for the Apollo program and applied it to a home insulation system. The company's Radiant Barrier insulation was adapted from the aluminum shield used on Apollo spacecraft as a radiation barrier that held in or kept out heat, cold air, and water vapor. GWS installed its polymer film insulation in home attics to block vapor and radiant heat, reducing operating time for heating and air conditioning and increasing home energy efficiency.

Oil and Gas Well Productivity Increased with Automated Measuring System *(Oklahoma City)*
NASA telemetry expertise enabled Nu-Tech Industries, Inc. to develop an automated method for measuring oil and gas flow at unattended wells. The company turned to a NASA industrial application center at Southeastern Oklahoma State University for help designing a flow measurement system that incorporated Nu-Tech's existing equipment and techniques. NASA assistance saved Nu-Tech valuable development time and funds and provided access to space-derived gas measurement, microcomputer, and microswitch technologies. The resulting flow measurement technology enabled Nu-Tech to control wells remotely and increase productivity.

NASA Support Decreased Development Time and Costs for Solar Equipment Maker *(Tulsa)*
NASA assistance substantially reduced research and development time and costs when Independent Utility Systems (IUS) was formulating its solar panel design. A NASA industrial application center at Southeastern Oklahoma State University assisted IUS with locating a NASA-developed polycarbonate material that proved ideal for the company's solar panel covering. IUS developed a medical refrigeration unit and a water pump powered by solar cells that converted sunlight directly into electricity for use in areas where conventional power is unavailable.



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 18 Oklahoma 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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