



NASA's Impact in Texas: 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 **\$3 billion** in the state of Texas.

Since 2001, NASA's SBIR/STTR Program has invested nearly **\$60 million** in **54 Texas companies** and more than **\$1.2 billion** nationwide.

How NASA's SBIR/STTR Program Benefits Texas

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.

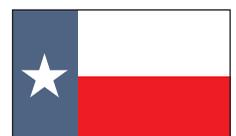
SBIR/STTR stimulates technological innovation by encouraging small, high-tech companies—particularly minority and disadvantaged businesses—to partner with NASA to help meet its research and development needs in key technology areas. At the same time, this program strengthens small companies by enabling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

The list to the right highlights Texas 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 Texas

21st Century Technologies, Inc.	Austin
Advanced Powder Solutions.....	Cypress
AM Biotechnologies, LLC.....	Houston
Austin Satellite Design, LLC.....	Austin
Balcones Technologies, LLC	Austin
BioTex, Inc.	Houston
Carbon-Carbon Advanced Technologies, Inc.	Kennedale
Carter Aviation Technologies	Wichita Falls
Coherent Logix, Inc.	Austin
Concrete Solutions, Inc.	Austin
Dallas Optical Systems, Inc.	Rockwall
Entech Solar, Inc.	Fort Worth
Fine Structure Technology, LLC.....	Austin
GeneXpress Informatics, Inc.	Austin
Geospatial Research Innovation Design	Corpus Christi
HPN Software Consultant, Inc.	Houston
Integrated Micro Sensors, Inc.	Houston
IntelliEPI IR, Inc.	Richardson
Invocon, Inc.	Conroe
Ionwerks, Inc.	Houston
Knowledge Based Systems, Inc.	College Station
Lithium Power Technologies, Inc.	Manvel
Lynntech, Inc.	College Station
MEMtronics Corporation.....	Plano
Metrica, Inc.	San Antonio
Nano EnerTex.....	Houston
Nanohmics, Inc.	Austin
NanoTex Corporation	Houston
Newtrition Foods	Houston
Odyssey Space Research, LLC	Houston
Omega Optics, Inc.	Austin
Omnitech Robotics, Inc.	Austin
Operational Technologies Corporation.....	San Antonio
Opin Technologies, Inc.	Austin
Polatomic, Inc.	Richardson
PrivaTran, Inc.	Austin
Quantum Logic Devices	Georgetown
QuickFlex, Inc.	San Antonio
Rechargeable Battery Corporation.....	College Station
RosettaMed, Inc.	Houston
Spin Diagnostics, Inc.	Houston
StarVision Technologies, Inc.	College Station
Stellar Micro Devices.....	Austin
Systems & Processes Engineering Corporation ...	Austin
TeraVicta Technologies, Inc.	Austin
Tietronix Software, Inc.	Houston
TRAC Labs, Inc.	Webster
TXL Group, Inc.	El Paso
Valeo Human Performance, LLC	Houston
Vcrsoft, LLC	Arlington
Whereabout LP.....	Universal City
Williams-Pyro.....	Fort Worth
Winzen Engineering, Inc.	San Antonio
Zyvx Corporation	Richardson

texas



How NASA Spinoffs Benefit Texas



NASA Spinoff Cleans Up Oil Spills, Wastewater *(Round Rock)*

Through NASA contracts, Micro-Bac International, Inc. developed a phototrophic cell for water purification. The cell contained strains of photosynthetic bacteria isolated to break down toxic chemicals astronauts could encounter on the International Space Station. The company now uses those bacteria strains for the remediation of animal waste, wastewater systems, and septic tanks, and in waste treatment for livestock farms and food manufacturers. The innovation is also used in the cleanup of crude oil spills and helped to mitigate the environmental impact of the oil that reached shore during the 2010 oil spill in the Gulf of Mexico.



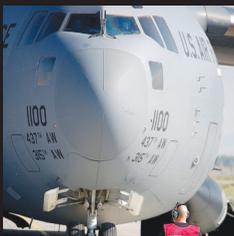
Space Research Leads to Semiconductor Development *(Sugar Land)*

Researchers at one of NASA's former Commercial Space Centers advanced a molecular beam epitaxial technique in order to develop specialized thin film semiconductor materials. Their experiments resulted in the first thin film materials made in the vacuum of space, helping pave the way to better thin film development on Earth. Today, Applied Optoelectronics, Inc. uses the technique to develop and manufacture optical devices for fiber optic networks including cable television, wireless Internet, telecommunications, data communications, and fiber-to-the-home applications. The company is one of the largest developers and manufacturers of advanced optical devices, selling 1 million units annually.



Bioreactor Technology Enables Stem Cell Therapies *(Houston)*

While studying the effects of long-term microgravity on human tissues, NASA researchers developed a rotating wall bioreactor that enables the growth of human cells in simulated weightlessness, resulting in tissues that closely approximate those in the body. The technology may be used someday to culture red blood cells for injured astronauts. Regenotech, Inc. licensed the bioreactor technology from NASA and is using it for rapid, healthy cell growth, providing for a quicker, low-cost source of adult stem cells for therapy and medical research. Current research agreements focus on development of stem cell therapies for diabetes, heart disease, cirrhosis, and veterinary orthopedic treatments.



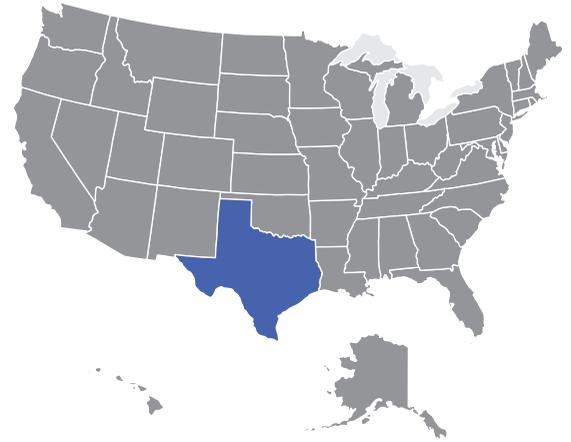
Advanced Software Supports Project Management *(College Station)*

NASA missions require specialized scheduling, knowledge-management, and research software tools. Through several long-term SBIR contracts, Knowledge Based Systems, Inc. developed advanced software that helps manage complex projects and has been applied in several NASA and military missions. Used independently or as a suite, the programs help streamline and speed up the planning and scheduling of project tasks such as modeling and analyzing or making intelligent decisions using a ranked system of prioritized choices. The software is particularly useful for knowledge-sharing and communication in large military enterprises or in multisystem computer application environments.



Nanomaterials Enhance Hairstyling Tools *(Houston)*

An innovation first designed to deliver cancer-fighting drugs into tumors has surprising applications in hairstyling. NASA scientists developed ceramic nanoparticles containing a unique mixture of metal oxides that when heated become a drug-delivery system. Professional hair care product maker Farouk Systems, Inc. adapted the heating technology for use with its ceramic composite hairstyling irons. When heated at low temperatures, the irons release ions that are beneficial for hair, making it softer, smoother, and easier to style. The company has expanded use of the nanomaterials to an extensive line of brushes, curling irons, nail lacquers, and hair dryers.



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 Johnson Space Center in Texas—have helped 266 Texas 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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