National Aeronautics and Space Administration

NASA's Impact in Indiana: 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 **$130 million** in the state of Indiana.

Since 2001, NASA's SBIR/STTR Program has invested over
$5 million in **8 Indiana companies**
and more than **$1.2 billion** nationwide.

How NASA's SBIR/STTR Program Benefits Indiana

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 Indiana 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 Indiana

En'Urga, Inc.	West Lafayette
GFT, LLC	Pennville
IN Space, LLC	West Lafayette
Jabiru Software and Services	West Lafayette
Kinetic Art and Technology Corporation	Greenville
PC Krause and Associates, Inc.	West Lafayette
Techshot, Inc.	Greenville
Zeeko Technologies, LLC	West Lafayette

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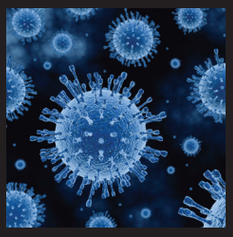
How NASA Spinoffs Benefit Indiana



Magnetic Separator Benefits Cancer Research

(Greenville)

Since 1988, NASA has issued over 25 SBIR contracts to the company now known as Techshot, Inc., a Greenville-based company. In the early years of their partnership, Techshot engineers teamed with NASA to design and integrate hardware for suborbital rocket flights, space shuttle missions, and several payloads for the International Space Station.

Techshot later won a contract to develop separation technologies for NASA. The company's advanced separators helped NASA conduct scientific experiments in microgravity, and the innovation also enabled Techshot to develop a spinoff that now benefits the medical community and patients. A Techshot spinoff company, IKOTech, LLC, brought to market a cell sorting system that is helping to advance stem cell research, bone marrow transplants, and cancer treatments. IKOTech is also working to develop a cure for Type I diabetes, a disease that affects 8 percent of the U.S. population. Techshot credits the success of their separation technologies with their years of experience working with NASA and considers the company itself a spinoff.

NASA Spinoff Improves School Bus Safety

(Indianapolis)

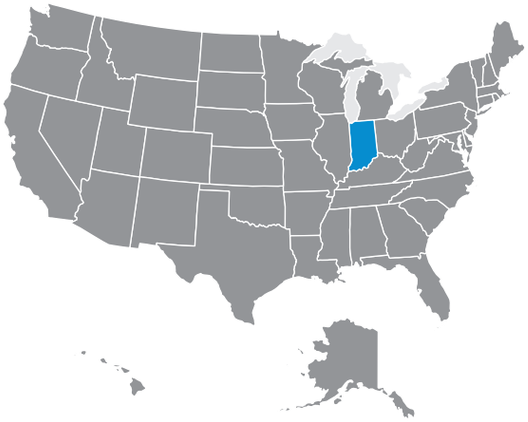
Technologies originally developed by NASA to aid in aircraft design and manufacturing have helped the Navistar International Corporation design safer and more reliable school buses. Parent concern for maximum safety and reliability prompted the manufacturer to introduce a chassis designed specifically for school transport.

Navistar relied on three NASA technologies to improve their school bus chassis. First, they used NASA's state-of-the-art software to analyze various chassis structures before locking in on a final design. Second, Navistar conducted stress measurements, analyzed load transfer mechanisms, and monitored structural changes using NASA's equipment. Third, the company used NASA's sensor system for assessing aircraft passenger comfort to ensure a smooth, comfortable ride for school bus passengers. These technologies are part of a much broader initiative that enabled the Navistar line of trucks and buses to capture nearly 50 percent of the total school bus chassis market.

NASA Helps Improve Fuel Efficiency in Diesel Engines

(Columbus)

Cummins, Inc. designs and manufactures service engines sold worldwide. The company's principal market is the heavy duty truck industry, and the major U.S. truck manufacturers offer Cummins engines as standard or optional equipment. A portion of the company's research efforts are focused on advanced turbocharged engines that provide extra power while delivering greater fuel efficiency. In order to optimize their turbocharged engines, the company conducted a number of feasibility studies using NASA software. This software calculated turbine rotor mass flows and efficiencies, enabling Cummins to evaluate the power and efficiency of various turbine designs. Assistance from NASA not only lowered the company's software development costs but it also helped company engineers validate design concepts to develop the best possible product.



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 62 Indiana 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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Publication herein does not constitute NASA endorsement of the product or process, nor confirmation of manufacturer's performance claims related to any particular spinoff development.

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