National Aeronautics and Space Administration

NASA's Impact in Rhode Island: 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 **$6 million** in the state of Rhode Island.

Since 2001, NASA's SBIR/STTR Program has invested over **$1.2 billion** in companies across the country.

How NASA's SBIR/STTR Program Benefits the U.S. Economy

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.

(Visit http://sbir.nasa.gov for more information on the SBIR/STTR program.)

rhode island

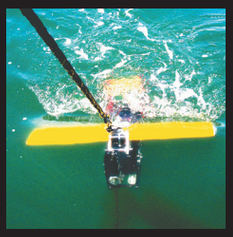
www.nasa.gov

How NASA Spinoffs Benefit Rhode Island

Apollo-Era Life Raft Saves Hundreds of Sailors *(Tiverton)*

In the era before spacecraft could return to Earth on runways, NASA relied on water landings. A space capsule landed in the ocean and astronauts would climb aboard a life raft until helicopters retrieved them. The helicopter's rotor downdraft could sometimes destabilize the raft; therefore, NASA set out to develop a highly stable ballast system that would prevent the life raft from tipping in choppy seas and fierce winds.

Givens Marine Survival Company, Inc. licensed NASA's patented stabilization technology. The company now manufactures and markets rescue rafts for everything from sailboats to larger ocean-going vessels. To date, Givens has sold several thousand of the ballasted inflatable life rafts, and the space-age technology is credited with saving the lives of over 450 sailors.



NASA Helps Scientists Better Understand the Earth's Oceans *(Narragansett)*

Scientists observe the color of the ocean to assess its water quality, pollution levels, and the status of fisheries. The first observations of ocean color from space were carried out by NASA's Nimbus-7 research satellite from 1978 to 1986. This groundbreaking research provided scientists with an unprecedented view of the world's oceans and opened a whole new field of oceanographic study.

In collaboration with NASA, WET Labs, Inc. developed a technology for validating ocean color images provided by satellites. The product, towed behind a boat, measures how light is absorbed, scattered, and weakened; chlorophyll fluorescence (an indicator of phytoplankton); and temperature, depth, and salinity. The data is helping researchers better understand and protect our home planet.

Innovative Satellite Antenna Enables Telecommunications On the Go *(Middletown)*

A partnership between KVH Industries, Inc. and NASA hastened the availability of high-speed Internet, wireless communications, and satellite television on moving vehicles, such as buses and trains. In the 1990s, NASA developed an experimental, microprocessor-controlled satellite antenna for motorists to send and receive phone, fax, and other telecommunications. KVH obtained an exclusive license from NASA to convert the high-tech communications gear into consumer products.

KVH has become a leading manufacturer of technology that provides global high-speed Internet, television, and voice services via satellite to mobile users at sea, on land, and in the air. Thanks in part to this early collaboration, KVH customers have access to satellite TV, communications, and Internet services while on the go.

NASA's Uplifting Toy Story *(Pawtucket)*

NASA's expertise in aerodynamics helped Hasbro, Inc. design foam gliders that have delighted children around the world. Early glider prototypes were literally falling short in terms of flying distance and loop-to-loop stunt capabilities. Searching for solutions to the challenge, Hasbro sought out a partnership with NASA.

NASA gave the Hasbro designers technical guidance and a hands-on tutorial on the physics of designing and flying gliders. Where to place the wings on a glider's fuselage and the correct angle for its tail surfaces proved critical in the foam toy's makeover. The final product soared beyond the Hasbro design team's expectations and helped the company bring to market a superior 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 14 Rhode Island 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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NP-2012-01-822-HQ | 01.31.12