



NASA's Impact in Colorado: 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 **\$1.7 billion** in the state of Colorado.

Since 2001, NASA's SBIR/STTR Program has invested nearly **\$70 million** in **69 Colorado companies** and more than **\$1.2 billion** nationwide.

How NASA's SBIR/STTR Program Benefits Colorado

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 Colorado businesses that received SBIR/STTR contracts from NASA since 2006. (Visit <http://sbir.nasa.gov> for more information on the SBIR/STTR program.)

NASA SBIR/STTR Companies in Colorado

Advanced Solutions, Inc.	Littleton
Altius Space Machines, Inc.	Louisville
Atmospheric Observing Systems, Inc.	Boulder
Blue Sun Enterprises, Inc.	Boulder
Boulder Environmental Sciences and Technology.....	Boulder
Composite Technology Development, Inc. .	Lafayette
Cullimore & Ring Technologies, Inc.	Littleton
Design Net Engineering, LLC.....	Golden
DMX Engineering	Durango
Free Space Research	Westminster
HKM Enterprises, Inc.	Denver
International Photonics Consultants.....	Pagosa Springs
KromaTiD, Inc.	Fort Collins
Lexycom Technologies, Inc.	Longmont
Microelectronics Research Development Corporation.....	Colorado Springs
Micro Space, Inc.	Denver
MMA Design, LLC.....	Loveland
Neva Ridge Technologies, Inc.	Boulder
Noqsi Aerospace, Ltd.	Pine
Numerica Corporation	Loveland
Optical Engines, Inc.	Colorado Springs
Quest Product Development Corporation....	Arvada
Reaction Systems, LLC.....	Golden
RST Bioscience	Aurora
RT Logic.....	Colorado Springs
Sibelloptics, LLC	Boulder
Special Aerospace Services	Boulder
Sporian Microsystems, Inc.	Lafayette
sysRAND Corporation	Parker
Zolo Technologies, Inc.	Boulder
Zybek Advanced Products, Inc.	Boulder

colorado



How NASA Spinoffs Benefit Colorado



NASA Spinoff Improves Weather Forecasting *(Boulder)*

NASA and the Radiometrics Corporation jointly developed a radiometer that provides accurate, real-time information on icing conditions for aircraft. The technology also helps meteorologists predict dangerous weather conditions, including thunderstorms, strong winds, lightning, hail, icing, fog, tornadoes, and flash floods. These radiometers were used for short-term weather predictions during the 2008 and 2010 Olympic Games and they have been deployed in air traffic control towers around the world.



GPS Software Pinpoints Satellites *(Longmont)*

DigitalGlobe, Inc., a leading global provider of commercial satellite imagery, recently licensed NASA's innovative global positioning system (GPS) software. The license enabled DigitalGlobe to produce high-resolution satellite imagery with extremely precise latitude and longitude coordinates. The company's Earth imagery products are used to better identify the world's natural resources, monitor pipelines and facilities, analyze the earth's environmental condition, protect homelands and borders, and respond to emergencies and natural disasters.



NASA Partnership Enables Development of Solid-State Recorders *(Englewood)*

In the 1980s, SEAKR Engineering, Inc. developed a solid-state recorder (SSR) for NASA crafted entirely from solid materials with no moving parts. SEAKR has since built upon its expertise with solid-state electronics to branch out into additional technologies, including high-performance computers for spacecraft, memory boards, high-resolution imagery, and Internet routers. This early partnership with NASA helped the company become the world leader in SSR technology for spacecraft.



Cloud Imaging Offers New Details on Earth's Health *(Boulder)*

Through NASA funding, Stratton Park Engineering Company, Inc. (SPEC) has developed a cloud particle imager (CPI) to help the scientific community better understand the Earth's climate. As a research aircraft flies through clouds, the externally mounted CPI captures digital images of cloud particles that range in size from 15 to 2,500 micrometers. By creating a comprehensive database of particle sizes, SPEC's CPI system can help alert scientists to changes in the Earth's climate over time.



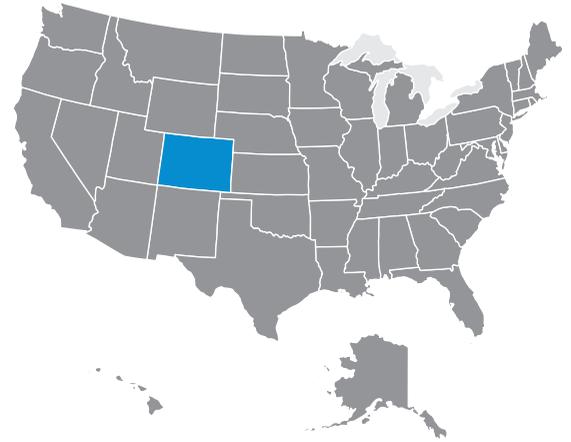
NASA Electrolyte Formula Combats Dehydration *(Boulder)*

An electrolyte formula developed to help astronauts stay hydrated during space missions is now benefitting the public. Wellness Brands, Inc. licensed the formula from NASA to provide hydration for elite athletes and endurance sport enthusiasts. But it is not only athletes who benefit from the electrolyte formula. Under the exclusive NASA license, Wellness Brands plans to market products to help combat dehydration due to long-distance flights, jet lag, altitude sickness, diseases, and heat stroke.



Aerodynamics Research Revolutionizes Truck Design *(Loveland)*

A NASA innovation has dramatically improved the fuel efficiency of large trucks and recreational vehicles on America's highways. Airtab, LLC, the marketing arm of Aeroserve Technologies, Ltd., relied on NASA's aerodynamics research to develop its vortex generator, a product that helps reduce drag and improve vehicle stability and fuel economy. Thanks to this partnership, the average U.S. tractor trailer is now 15-25% more fuel efficient at highway speeds.



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 197 Colorado 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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