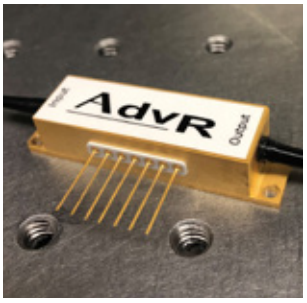
National Aeronautics and Space Administration

SBIR CASE**STUDY** MONTANA









The AdvR engineering team (left and top right) credits direct, personal communication with their contacts at NASA's SBIR program with the success of the collaboration. The company developed technology (bottom right) that is key to NASA's ongoing atmospheric studies and led to additional applications that have been sold to myriad government agencies and companies worldwide. All photos courtesy of AdvR.

Remote Sensing Success for NASA Extends to Small Business Growth

SBIR contracts with NASA enabled development of a compact, robust electro-optic module that has garnered global sales and adoption by multiple government agencies.

AdvR Inc.
Bozeman, Montana
advr-inc.com
Founded: 1999
Staff Size: 19

Through the SBIR program, AdvR developed technology to assist NASA's ongoing atmospheric studies through collaborative development of a High Spectral Resolution Lidar system for characterization of clouds and aerosols. The core innovation has led to new devices that address a broad range of remote sensing needs sought by government, academia, and industry. The result has been business growth and a strong, ongoing relationship with NASA.

> "When we first started with SBIR, we were very niche focused. Over the years, we have expanded our capability to provide more value to NASA, which enabled commercial applications as well. It's been exciting to see the initial effort turn into systems and subsystems that can be used for research, flight, and future space applications."



—Shirley McNeil, Senior Laser Systems Engineer, AdvR

A 2007 SBIR contract with NASA enabled AdvR to develop an optical waveguide circuit that has provided significant benefits for NASA's Earth Science Division. The technology at the heart of this effort has also been a boon for AdvR's growth, with sales to universities, businesses across multiple commercial industries worldwide, and a wide range of U.S. government agencies.

The results have been significant. AdvR has seen growth in global revenue and increases in company headcount in addition to multiple subsequent SBIR contracts. Each new contract has enabled increases in the capability and robustness of AdvR's waveguide-based technology, which the company expects to ultimately lead to space qualification—yet another milestone for this growing business.

AdvR's Path to Success

- **Specific need:** Addressed an identified NASA challenge for which there was a clear path to technology infusion
- **Unique capability:** Provided needed expertise that was in line with the company's core development focus
- **Broad engagement:** Educated the sales team on how the innovation could also benefit academia and commercial industries

Engaging with NASA

While AdvR's current efforts with NASA have been ongoing since 2007, the company's relationship with the SBIR program dates back to its founding. Not only does the company maintain open lines of communication with NASA contacts, but it has prioritized in-person meetings and on-site delivery of hardware for each contract. The company credits this outreach with ensuring direct collaboration with NASA's technical personnel to acquaint them with the hardware. These regular meetings have also helped strengthen communication about current technical challenges and anticipate NASA's future technological needs for its lidar systems.

Markets for AdvR's Technology

NASA Applications

- Airborne High Spectral Resolution Lidar
- Airborne High Altitude Lidar Observatory
- Missions for aerosol, wind and methane, and water vapor sensing

Other Government & Commercial Applications

- Quantum communications
- Atomic or molecular spectroscopy
- Environmental and pollution monitoring

> "SBIR has been the main source of development funding for our company and has opened the door to advancing our technology and the products we can offer. The advances SBIR has enabled for the core technology have helped us expand to offer devices that we previously didn't have the capability for."

—David Walsh, Business Development Specialist, AdvR

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NASA SBIR/STTR Program
sbir.nasa.gov

www.nasa.gov

Join the hundreds of small companies that have participated in NASA SBIR projects.

Visit *https://sbir.nasa.gov* where you can:

- Learn more about the SBIR and STTR programs and how to get started
- View the annual Solicitation to find NASA needs that match your capabilities
- Sign up for newsletters and download other resources

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