United States Department of Agriculture

National Institute of Food and Agriculture

USDA SBIR

SMALL BUSINESS INNOVATIVE RESEARCH PROGRAM

Enhancing American Agriculture, Rural Health Care, Rural Communities, and the Environment

WWW.NIFA.USDA.GOV/SBIR

SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM

The federal SBIR program, established under the Small Business Innovation Research Act of 1982, has funded thousands of small business research and development projects. The National Institute of Food and Agriculture (NIFA) administers the U.S. Department of Agriculture's (USDA) SBIR program, which focuses on projects that enhance American agriculture, rural health care, rural communities, and the environment.

USDA SBIR PROGRAMS:

- Stimulate technological innovations in the private sector
- Strengthen the role of small businesses in meeting federal research and development needs
- Increase the commercialization of innovations derived from SBIR-supported private sector research and development efforts
- Foster and encourage SBIR participation by women-owned and socially and economically disadvantaged small businesses

Qualified, established small businesses with proposals for high quality, advanced research are eligible for competitive awards. Their research must relate to important scientific problems and opportunities in agriculture that may lead to significant public benefit. USDA encourages small businesses to partner with university and federal lab researchers to develop technology, processes, or products.

RECOGNIZING OPPORTUNITY

Providing solutions to the issues that face American agriculture and society requires passion and dedication, traits that are synonymous with the drive of small business owners. SBIR funds focused, valuable projects and creates partnerships between university researchers and small businesses to bring together science, research, production, and marketing in a way that allows forward-thinking ideas to become a reality.

FACILITATING PROGRESS

USDA uses two SBIR phases to gives grantees the resources they need to create a process that thoroughly addresses the science, business, and organizational planning to develop an investment-worthy commercialization strategy.

THE SBIR PROCESS

Phase I is open to any eligible small business.

FUNDING LIMIT: $100,000

DURATION: 8 months

OBJECTIVE: Determine the scientific feasibility of ideas with commercial potential.

RESOURCE: To view the current Request for Applications, visit nifa.usda.gov/fo/sbir

Phase II is open only to previous Phase I awardees.

FUNDING LIMIT: $500,000

DURATION: 24 months

OBJECTIVE: Facilitate a research and development phase with scale-up of the innovation that provides a positive return on investment. Phase II also allows for commercialization planning and implementation of the technology, product, or service.

Phase III is not funded by USDA, but successful Phase II grantees are encouraged to secure funding from personal, public, private, and state resources and investments to enable commercialization.

SBIR RESEARCH AREAS

Air, Soil, and Water

Creates technology for conserving and protecting essential resources while sustaining optimal farm and forest productivity by reducing erosion, enhancing quality, developing irrigation techniques, reducing pollution caused by agriculture enterprises, and promoting these new technologies.

Animal Production and Protection

Develops and markets innovative technologies to help agriculture animal producers improve production efficiency, prevent diseases and outbreaks, conserve resources, and reduce costs of production.

Aquaculture

Improves private sector production and competitiveness by increasing reproductive efficiency and genetic improvement in fish and shellfish; enhancing animal health, food safety, production efficiency, and cost-effective production of alternative proteins; and reducing water usage.

Biofuels and Biobased Products

Promotes product usage through innovative technologies that increase bio-production from agriculture materials and provide new opportunities to diversify agriculture's role in the raw materials industry.

Food Science and Nutrition

Develops products and processes from new knowledge; improves methods of processing and packaging for better quality and nutritional value; and promotes programs and products that increase consumption and understanding of healthy foods, while reducing childhood obesity.

Forests and Related Resources

Focuses on the health, diversity, and productivity of forests and grasslands by sustaining forest resources, addressing climate change impacts, developing value-added materials, and protecting existing ecosystems.

Plant Production and Protection — Biology

Enhances crop production and protection through biological approaches that reduce the impact of harmful agents, advance plant improvement methods, and develop new food and specialty crop plants.

Plant Production and Protection — Engineering

Enhances crop development and safety by reducing the impact of harmful agents and developing economically and environmentally sound production, post-harvest, and storage systems.

Rural and Community Development

Conceptualizes and commercializes new and existing technology, products, processes, and services that enhance efficiency and equity of public and private investments; builds a diversified workforce; increases resilience to natural and human disasters; and improves economic vitality of rural communities and the reduction of poverty.

Small and Mid-Sized Farms

Increases sustainability and profitability of farms and ranches through newly developed plant, animal, organic, and natural products; enhanced farm safety; increased operation efficiency; and conservation of natural resources.

REALIZING POTENTIAL

BIOPRODEX, INC. developed a bioherbicide that targets the highly invasive tropical soda apple weed. SolvinNix®LC contains a naturally occurring plant virus that attacks weeds. This ingredient, listed as a "Section 3" registration with the Environmental Protection Agency (EPA), makes SolvinNix the world's first EPA-approved biological herbicide to contain a plant virus as the active ingredient.

WHOLE TREES, LLC, a four-time grantee, developed a new market for small-diameter round timber — a waste product of well-managed forests. By 2016, this business is projected to increase its local revenue from $150,000 to $4 million and double its staff. Construction projects that use Whole Trees products receive triple the amount of Leadership in Energy and Environmental Design credits for green structural material.

NITRATE ELIMINATION COMPANY, INC. developed kits that allow farm managers to determine nitrate accumulation levels on their farms, which helps them manage nitrate concentration, reduce costly nitrogen fertilizer use, and reduce pollutants. This product is in the final certification stages as a standard method for all nitrate testing under the Clean Water Act and is used as the standard method within all U.S. Geological Survey soil labs.

ALTAEROS ENERGIES developed the Buoyant Airborne Turbine (BAT), which leverages proven aerospace technology to lift wind turbines into the strong, consistent winds beyond the reach of traditional towers. It is able to reliably support and stabilize heavy communications and monitoring equipment in the air for decades. BAT has been successfully commercialized in 2015 and telecom group SoftBank invested $7 million for future deployments of BAT technology in Japan.

GREEN HERON TOOLS developed a new line of ergonomically efficient garden tools to address the particular needs of women's bodies. After successfully completing Phase I, the company was awarded Phase II funding in 2010. This SBIR assistance allowed for the safety research and development that produced HERShovel, a safer, scientifically-created alternative to standard unisex tools and tools made smaller solely for aesthetic purposes. HERShovel moved into Phase III soon after and is now available commercially.

Cover photo of plant: iStock; all other photos printed with permission of grantees

NIFA invests in and advances agricultural research, education, and extension and seeks to make transformative discoveries that solve societal challenges. Learn more by visiting **WWW.NIFA.USDA.GOV** or following **@USDA_NIFA** on Twitter.

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