

SUCCESS STORIES

For full stories about Oklahoma businesses and researchers making an impact on our state's economy and to the quality of life of citizens around the globe, visit www.oCAST.ok.gov.



PROTECTING OUR FOOD SUPPLY

Contamination of fresh produce with bacteria such as E.coli, listeria and salmonella and the resulting food borne illnesses are on the rise. Two of the deadliest outbreaks were recorded in 2011. The negative impact on global health as well as the agriculture industry can be devastating. With support from OCAST, OSU researcher Jacqueline Fletcher has made several scientific advances toward finding solutions by investigating how Salmonella can contaminate and grow on cantaloupe — these advances could ultimately save lives.

PROVIDING ENERGY SOLUTIONS

Oil and natural gas are big business in Oklahoma. OCAST funding has helped Impact Technologies LLC design, test and commercialize more than 20 new products and technologies in advanced drilling and oil recovery systems. The innovative products are safer for the environment and help the industry lower cost and recover more oil and gas.



FIGHTING HOSPITAL INFECTIONS

During a recent five year period when the incidence of antibiotic-resistant infections in the U.S. nearly doubled, only three novel antibiotic drugs received FDA approval. Of these, none were effective against one of the most common pathogens in hospital-acquired pneumonia. Between the surge in drug resistance and lack of new antibiotics to treat these infections, the public faces an increasing threat. With the support of OCAST, Biolytx is developing a novel class of antibiotic drugs to fight these dangerous pathogens.



FLYING ROBOTS aka UNMANNED AERIAL VEHICLES

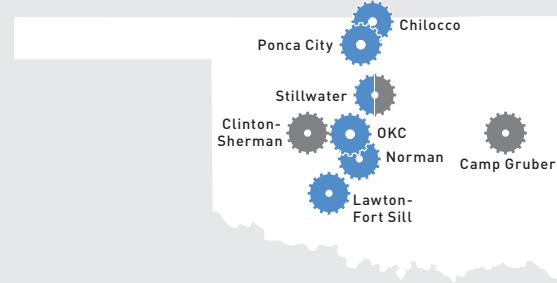
According to the Teal Group, the global unmanned aerial systems (UAS) market is predicted to be a \$94 billion industry over the next decade, and the rapid progress for Oklahoma's UAS sector is attracting international interest. The applications for UAS are broad. The remotely piloted aircraft can carry cameras, sensors, communications equipment or other items and are most widely known for uses in military operations.

The OSU University Multispectral Laboratories operates one of the only UAS airfields in the U.S. where no FAA Certificate of Authorization is required — the result of an agreement between the University Multispectral Laboratories and the Fort Sill Army post in Lawton. This gives Oklahoma a competitive edge in the industry and is one of the reasons Oklahoma is attracting attention from all over the globe.

Oklahoma is also involved in the development of UAS, especially the new field of small UAS called micro air vehicles (or MAVs). One example is Norman-based

Design Intelligence Incorporated LLC who in 2007 won an SBIR Phase I award for \$100,000 from the Air Force Research Laboratory allowing the company to begin development of energy harvesting and power management technology for MAV applications to enable extended mission duration and range. The Phase I award led to a follow-on Phase II award from the Air Force and then additional UAS and MAV related SBIR projects including projects for MAV development.

"The stakes were high for a Phase II award and the gap of time in funding, about four months in our case, can be a killer for small start ups — you literally run out of cash and you want to retain your best employees and capabilities," said James Grimsley, president and CEO of Design Intelligence Incorporated LLC and president of the Unmanned Systems Alliance of Oklahoma. "There is so much to prepare, and you have to hire highly-qualified people and get them on board. OCAST gave us bridge funding to help with the transition. Without that support from OCAST, our transition to the Phase II would not have been as successful."

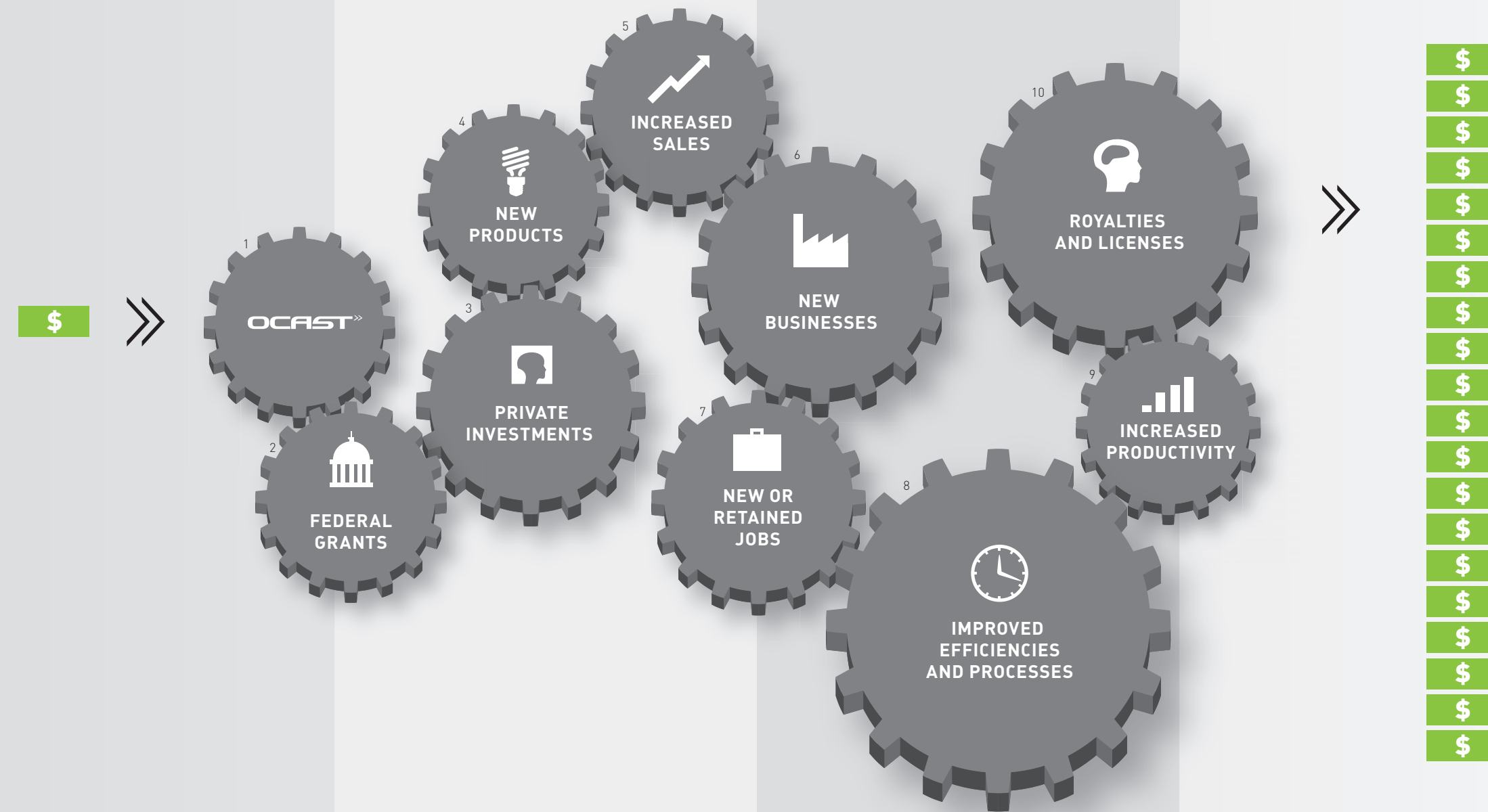


OKLAHOMA UNMANNED AERIAL SYSTEMS INFRASTRUCTURE MAP

- EXISTING FACILITY OR PROGRAM
- FACILITY PLANNED OR UNDER CONSTRUCTION

From information provided by Dr. Stephen McKeever, secretary of science and technology for the state of Oklahoma.

20:1 ROI FOR EVERY \$1 INVESTED BY THE STATE IN OCAST, \$20.39 IS RETURNED TO OKLAHOMA'S ECONOMY IN VARIOUS FORMS



- OCAST** — OCAST provides early-stage funding that enables Oklahomans to develop their ideas so national foundations, private investors and federal agencies take notice — offering the potential for millions of dollars to move their ideas to the marketplace.
- Federal Grants** — Oklahoma companies use OCAST funds to help them apply for larger federal grants from organizations such as the National Institutes of Health and the National Science Foundation.

- Private Investment** — OCAST funds attract investment from private sources.
- New Products** — Small businesses and researchers across the state are inventing new products and services.
- Increased Sales** — New products and services created by Oklahoma companies lead to higher tax revenue when sold.
- New Businesses** — The new products and processes created by Oklahomans often lead to the creation of new small businesses.

- New or Retained Jobs** — Both existing businesses and new businesses create new jobs. These jobs pay salaries on average more than \$25,000 higher than Oklahoma's per capita income.
- Improved Efficiencies and Processes** — Programs such as the Manufacturing Innovation Fund enable Oklahoma manufacturers to be more efficient and inject innovation into their operations. One hundred percent of the monies paid back to OCAST from these programs are used for additional awards.

- Increased Productivity** — Oklahomans are creating new products and processes that improve productivity of businesses that support Oklahoma's economy.
- Royalties and Licenses** — Oklahoma businesses are able to collect royalties and sell licenses for use of the products and services they create in our state.

All of these pieces work together to allow Oklahoma companies to bring new jobs, products, tax revenue and a better quality of life to our state.

BOARD OF DIRECTORS

- Mark Ashton, Lawton
- Galynn Beer, Agro-Culture Liquid Fertilizers, Guymon
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This publication was authorized by Title 74 of the Oklahoma Statutes, Section 5060.9. One-thousand copies were printed at a cost of \$1,192.85. 12/11



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"Our emerging UAS industry is fast becoming a model of successful collaboration between industry, universities and state government all working together towards a common vision and goal to advance the state's UAS and aerospace vision and mission. One of the goals of my administration is to continue to build on Oklahoma's long legacy of innovation and success in aerospace and to help the state move forward into the exciting new frontiers of aerospace such as UAS."

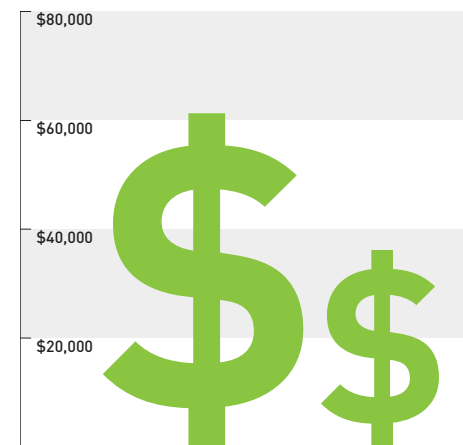
Oklahoma Governor Mary Fallin

CUMULATIVE IMPACT 1987 – 2011

Program	OCAST Award Amounts	Leveraged private investment, federal grants and business financials	Ratio
Applied Research	\$77,781,707	\$1,287,970,510	16.5
Health Research	\$68,315,216	\$341,221,686	4.99
Inventors Assistance Service	\$2,251,676	\$1,736,000	0.77
Manufacturing Alliance	\$16,684,323	\$1,786,946,924	107.1
Nanotechnology Applications Project	\$3,582,113	\$67,962,852	18.9
Plant Science Research	\$2,454,746	\$20,869,857	8.5
Seed Capital	\$9,996,282	\$31,443,661	3.1
Small Business Research Assistance	\$4,328,388	\$217,852,017	50.33
Technology Business Finance	\$8,867,917	\$294,227,484	33.17
Technology Commercialization Center	\$20,606,144	\$332,349,676	16.1
TOTALS	\$214,868,512	\$4,382,580,667	
LEVERAGE RATIO			20.39

FISCAL YEAR 2011 ANNUAL IMPACT

Program	OCAST Award Amounts	Leveraged private investment, federal grants and business financials	Ratio
Applied Research	\$3,526,517	\$70,957,362	20.12
Intern Partnership	\$309,729	\$13,606,992	43.93
Health Research	\$4,431,911	\$32,503,992	7.33
Inventors Assistance Service	\$165,205	---	---
Manufacturing Alliance	\$1,192,978	\$108,901,323	91.28
Nanotechnology Applications Project	\$1,140,557	\$29,582,916	25.94
Plant Science Research	\$1,090,528	\$10,094,347	9.25
Seed Capital	\$4,264,898	\$10,465,450	2.45
Small Business Research Assistance	\$220,202	\$7,950,273	36.1
Technology Business Finance	\$629,613	\$57,600,000	91.48
Technology Commercialization Center	\$1,803,055	\$137,400,000	76.2
TOTALS	\$18,775,193	\$479,062,655	
LEVERAGE RATIO			25.5



\$62,953:\$35,396 – Average salary reported by participants in OCAST-supported programs compared to average per capita income in Oklahoma.



Jobs created or retained by OCAST-supported organizations in FY 2011.



88 Inventors assisted by the Inventors Assistance Service in FY 2011.

54 Projects funded in FY 2011.

\$4.3 BILLION

Cumulative financial impact of OCAST-supported programs since 1987.

2,312 Projects funded since 1987.

RESOURCES FOR BUSINESSES AND RESEARCHERS



OCAST programs and strategic partners are available to help Oklahoma businesses and researchers prove their ideas, attract additional funding and take their products to market. For specific program requirements, funding levels, application deadlines or more information, contact OCAST.

INVENTORS ASSISTANCE SERVICE —

It's a long, winding path from invention to marketplace. IAS navigates the process through education, information and referrals.

MANUFACTURING INNOVATION FUND —

A pilot program that provides financing for established Oklahoma manufacturers. Financing through this program will allow companies to innovate or expand with production of a new product or improve an existing product. Loan repayments will support future financings through the fund.

OCAST SEED CAPITAL PROGRAM —

This seed stage fund targets companies that may or may not already have customers, revenue and a scalable product. The investment funds enable companies to build a business infrastructure around their concept or product.

- **OKLAHOMA CONCEPT FUND** — As part of the Oklahoma Seed Capital Fund, these investment dollars target companies still in the conceptual stage that don't yet have an actual product. The investment capital will allow them to transition an idea to a working prototype and/or validate the value to the target customer in order to evaluate the business concept.

OKLAHOMA APPLIED RESEARCH SUPPORT —

Cutting edge research leads to commercially successful products, processes and services. OARS funds research in all fields from medicine and agriculture to energy and manufacturing.

OKLAHOMA HEALTH RESEARCH —

Oklahomans are developing treatments and conducting research to help people live longer, healthier lives. Health funds research projects related to human health.

OKLAHOMA MANUFACTURING ALLIANCE —

Manufacturers must implement new technology and modernize in order to compete successfully in a global economy. The Alliance connects manufacturers to cost-effective resources, more efficient manufacturing processes and technology to increase productivity and reduce costs.

OKLAHOMA NANOTECHNOLOGY APPLICATIONS PROJECT —

Oklahoma scientists have big ideas for small, enabling technologies. Nanotechnology will impact all aspects of life by making products stronger, smaller, faster and more durable. ONAP assists Oklahoma companies with the process of applying nanotechnology through research, development and manufacturing to improve or create new products or processes.



OKLAHOMA PLANT SCIENCE RESEARCH —

Plant science research is playing a growing role in developing advancements in health, energy, agriculture and defense. Plant Science funds basic and applied plant science research.

INTERN PARTNERSHIPS —

Internships are vital to keeping talented undergraduate students in Oklahoma. The intern program supports R&D projects that involve Oklahoma industry and Oklahoma institutions of higher education by providing matching funds to support internship positions.

SMALL BUSINESS RESEARCH ASSISTANCE —

Small business owners and entrepreneurs sometimes need help

to apply for the federal Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. OCAST's SBRA program provides critical bridge funding between Phase I and Phase II and provides technical assistance.

- SBIR/STTR proposal preparation services.
- Expert coaching and mentoring. Guidance on what is needed to build a strong application.
- Help identifying SBIR/STTR funding opportunities.
- Identification of key collaborators, strategic partners and experienced principal investigators.
- External proposal reviewers.
- SBIR workshops and mentorship networks.

"Every bit as important as their bridge funding, OCAST helps with connections, information and resources. They coached us through putting together successful proposals to get investment and interest from outside the state. Now we're being awarded contracts, attracting new work, bringing in jobs and weaning ourselves from dependence on SBIR awards. We've quickly moved from a startup to a profitable business."

James Grimsley, president and CEO of Design Intelligence Incorporated LLC and president of the Unmanned Systems Alliance of Oklahoma.

GEARING UP FOR THE FUTURE

OCAST»
2012 IMPACT REPORT