



OKLAHOMA

Center for the
Advancement of
Science and
Technology

2022 IMPACT REPORT



THE MISSION OF THE **OKLAHOMA CENTER FOR THE ADVANCEMENT OF SCIENCE & TECHNOLOGY** IS TO **FOSTER INNOVATION IN EXISTING AND DEVELOPING BUSINESSES** – BY SUPPORTING BASIC AND APPLIED RESEARCH – **BY FACILITATING TECHNOLOGY TRANSFER** BETWEEN RESEARCH LABORATORIES AND BUSINESSES – **BY PROVIDING SEED CAPITAL FOR INNOVATIVE FIRMS** IN THE DEVELOPMENT OF NEW PRODUCTS OR SERVICES – **BY HELPING OKLAHOMA'S SMALL AND MEDIUM-SIZED MANUFACTURING FIRMS BECOME MORE COMPETITIVE** THROUGH INCREASED PRODUCTIVITY AND MODERNIZATION.

OCAST is Science and Innovation...

Team OCAST is pleased to present its 2022 Impact Report highlighting the agency's activities toward diversifying and growing Oklahoma's economy. Oklahoma's visionary Legislature established OCAST 34 years ago as the state's only agency for technology-based economic development that helps our state thrive and compete in the innovation economy. In addition, OCAST is the only state agency authorized to take an equity stake in companies receiving funding from its Seed Capital program. Through its statutory programs, OCAST has made significant inroads in building Oklahoma's innovation ecosystem. With a proven history of success, OCAST is now embarking on a bold new plan for the future—a future based on realizing opportunities in science, technology and innovation that will amplify Oklahoma's research strengths, its industrial and military complex and its legacy of natural resources.

OCAST is well positioned as a catalyst for exciting new opportunities in Oklahoma's high-growth areas—aerospace and autonomous systems; bioscience and biotechnology; and energy diversification. These high-growth areas are supported by cross-cutting technologies such as material science, sensors, information technology and manufacturing. Our vision is to transform Oklahoma into a technology corridor by building a culture of innovation driven by technology acceleration, timely investment, dynamic collaborations, connectivity and bold new initiatives. In alignment with Oklahoma's 2021 – 2026 Science and Innovation Strategic Plan, OCAST has evolved its strategic priorities in the following areas:

1. Focusing on more funding support for the state's three major strategic industries— aerospace and autonomous systems; biotechnology and life sciences; and energy diversification;
2. Revamping our organized capital investment capacity to support opportunities that prioritize the commercialization of technology as a core component of grant or equity funding requests;
3. Investing in a comprehensive strategy to effectively communicate OCAST's value to improving the state's national rankings in education, health and innovation.

As OCAST embarks on this next phase of growth, development and opportunity to create sustainable prosperity across our great state, our strategic intent is to better position our state as a viable player in today's economy as well as the next.



OCAST is well positioned as a catalyst for exciting new opportunities in Oklahoma's high-growth areas

C. Michael Cardenas

Executive Director, OCAST



NEW PRODUCT DEVELOPMENT CENTER

ENGINEERING & PROTOTYPING

- Investors Assistance Service



FEDERAL FUNDING

- Small Business Innovation Research Program
- Small Business Technology Transfer program



OKLAHOMA MANUFACTURING ALLIANCE

MANUFACTURING ASSISTANCE

- Industrial Extension System

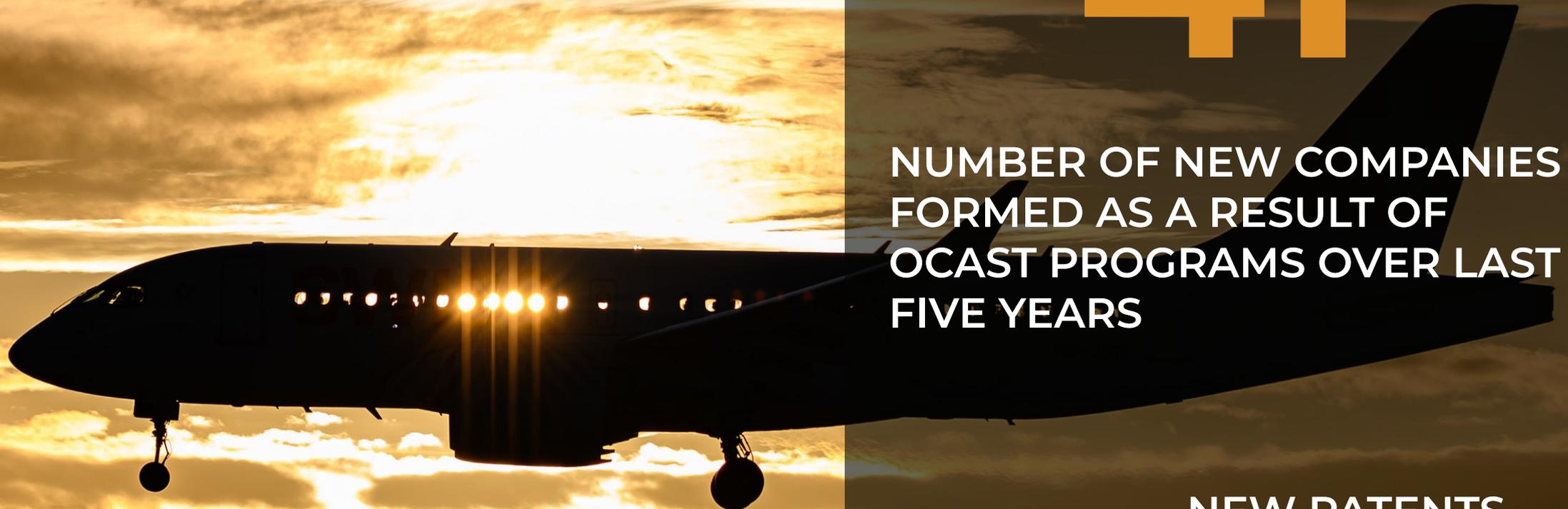


INNOVATION TO ENTERPRISE

CAPITAL INVESTMENT

- Oklahoma Technology Commercialization Center
- Technology Business Finance
- Oklahoma Seed Capital Fund

Five strategic partners work together to develop, support, and promote Oklahoma's technology-based economy. The partners include OCAST, the Oklahoma Manufacturing Alliance (OMA), Innovation to Enterprise (i2E), OK Catalyst at OU Tom Love Innovation Hub and the OSU New Product Development Center (NPDC).



41

NUMBER OF NEW COMPANIES FORMED AS A RESULT OF OCAST PROGRAMS OVER LAST FIVE YEARS

129

NEW PATENTS GRANTED IN 2021



The OARS program enabled a research partnership with Oklahoma State University's New Product Development Center that has significantly advanced the commercial potential of our products. Without funding from OCAST, we would not have been able to pursue this project.



Ross Faith, Vice President
SpectrumFX, Inc.





\$59,069

**AVERAGE ANNUAL WAGE OF
OKLAHOMA EMPLOYEES WORKING
AT OCAST CLIENT COMPANIES**



OCAST has been instrumental to our business, funding research for two platform technologies with a third under development, providing interns who have led to key hires, and continuous promotion of our business. Without a doubt, our company would not be where it is today without their financial, marketing, and general support.



Michael Tate, Founder & COO
Infinite Composites

2000+

OKLAHOMA JOBS CREATED OVER LAST FIVE YEARS



OCAST's strength can be summed into one word: Collaboration. OCAST's dedication to supporting established businesses, academic institutions, and in our case, a defense technology accelerator, is essential to business innovation and development in Oklahoma.



James Taylor, Director
Fires Innovation Science and Technology Accelerator





98%

COMPANIES THAT SAY THEY WOULD HIRE THEIR OCAST INTERN FOR A PERMANENT POSITION



I've interacted with the OCAST internship program from all sides. I started as an OCAST intern, and then I hired an OCAST intern. Right now we have two OCAST interns working for Embeddetech. It's a phenomenal program that helps companies build their team. For me, the OCAST internship gave me skills I would not have otherwise had. I had great mentors and the experience was life changing.

 Jonathan Torkelson, President | Principal Engineer
Embeddetech



We are thankful for the opportunity to partner with OCAST. Our OARS grant helped us to advance our business and diversify quickly. OCAST has made a difference in rural Oklahoma and indirectly will make a difference across the nation as our product rolls out.

 Justin Presley, National Accounts Manager
RamJack



OCAST has been tremendously helpful in furthering Skydweller's partnerships with the state's universities and growing, future talent pool across the state through their internship program. It has been a privilege to work with them!



Dr. Robert Miller, CEO
Skydweller Aero Inc.



\$1,002,255,392

TOTAL FINANCIAL IMPACT OF OCAST PROGRAMS



98.13%

OCAST Survey Response Rate



129

Patents Granted



2,016

Jobs Created or Retained



\$96,950,000

Value of Patents



94

Student Interns Hired/Retained



\$354,623,732

Impact on Capital Investments



\$199,587,669

Total Payroll



\$262,465,826

Impact on Gross Sales



\$59,069

Average Annual Wage



19

Companies Formed



\$185,578,165

Additional Funds Acquired as a Result of Initial OCAST Investment



\$1,002,255,392

Total Financial Impact



33

Patent Applications



20:1

Total Return on Investment

The FY 2020 audit report was completed by an independent auditor with no findings. As reported to the OSTRaD Board of Directors, there were no issues with the audit and the agency is in good standing.

OCAST is governed by the Oklahoma Science and Technology Research and Development (OSTRaD) Board of Directors (Title 74, Section 5060.6). This 9-member board of directors consists of the State Secretary of Science and Innovation as the OSTRaD board chair with four members appointed by the Governor and two each by the State Senate and House.



Elizabeth Pollard
CHAIR, Secretary of Science & Innovation



Blayne Arthur
Secretary of Agriculture



Sean Bauman
IMMY



David Ingram
Phillips 66



Thomas Kupiec
ARL/DNA Solutions



Dan Marticello
CymStar



Zachary Miles
Oklahoma State University



Jeff McCormack
Oklahoma Christian University



Brenda Rolls
Frontier Electronic Systems

Michael Carolina
Executive Director

Joyce Coleman
Executive Assistant

PROGRAMS

Dan Luton
Director, Programs

Heather McDowell
Associate Director, Programs
Tulsa + NE Oklahoma

Mark Ballard
Contracts Manager

Laura Sohl-Smith
Programs Officer

Jessica Stewart
Client Services Manager
Northern Oklahoma

Sam Ephgrave
Client Services Manager
Central + Southern Oklahoma

OUTREACH + POLICY

Amy Walton
Director, Government Relations
+ Strategic Initiatives

Lyle Walters
Policy + Planning
Legislative Liaison

Jason Baffrey
Public Information Officer

FINANCE + ADMINISTRATION

Elaine Spell
Director, Finance + Administration

Kristi Howes
Finance + Business Manager

Nona Lemley
Accountant

Michelle Douglas
Office Manager

In 2021, Oklahoma Secretary of Science and Innovation, Elizabeth Hutt Pollard, unveiled a Science and Innovation Strategic Plan (2021 - 2026), for Developing an Innovation Economy in Oklahoma. From that came a Pathway to Innovation, focusing on seven key strategies.

1. Establish the Office of Science & Innovation.

The Office of Science & Innovation will facilitate the development of meaningful collaborations across industry, academia, government, and nonprofits to create an integrated support system to stand up incubators and accelerators, hosting business plan completions, and partnering on research endeavors.

2. Identify Strategic Industries for Large Scale, Focused Investments and Partnerships. Those Strategic Industries Include:

• Aerospace, Autonomous Systems, and Defense

Research and development activity related to aerospace has been under way for decades in the state, and in the most recent decade for unmanned systems. Aviation is now – and has always been – an important part of the Oklahoma economy. The State of Oklahoma has research and development strengths, and most importantly – the vision and leadership to emerge as a leading region for growth in the autonomous systems and aerospace industry.

• Biotechnology/Life Sciences

Oklahoma has had significant biotechnology research and development activity underway for decades. Home to the University of Oklahoma with a comprehensive health system and NCI Cancer Center, Oklahoma State University with human and animal schools of medicine and a focus on a One Health approach (human, animal, agriculture), numerous other Universities/Colleges with life science curriculum, the Oklahoma Medical Research Foundation (OMRF), the Oklahoma Blood Institute (OBI), and many biotech and life science related companies, provide Oklahoma with a firm foundation for growth in this sector.

• Energy Diversification

Oklahoma has a long and rich history as a leader in oil and gas research and exploration. As the need for energy consumption and the environmental concerns around it continue to grow globally, the State has increased its focus on efficient and environmentally friendly methods and alternative energy solutions. Focusing more resources on these and other energy diversification areas will help the State develop and maintain leadership across all areas of energy.

3. Establish Center of Excellence in Research

Research universities play a central role in the innovation process. The Governor and the State Legislature should invest in Oklahoma's research universities. State investment in research is essential to Oklahoma's economic competitiveness and leadership. Investments should be made to the three strategic areas (aerospace and autonomous systems, biotechnology/life sciences, and energy diversification) and sustained in a consistent manner to achieve effectively long-term goals.

4. Create Superclusters of Innovation and Support Systems

Superclusters of innovation are economic hot spots with high concentrations of new technologies in particular fields germinating at a rapid rate and where pools of capital, expertise, and talent foster the development of new industries and new ways of doing business.

5. Establish a Federally Funded Research Lab

To achieve the goal of establishing one or more federally supported research labs in Oklahoma, Governor Stitt should create an Energy Diversification Council and a Life Sciences/Biotech Council similar to the already established Aerospace and Autonomous Systems Council. All three of the envisioned Councils will be responsible for securing federal grants in their respective area.

6. Invest in Education, Workforce Development, and Internship Programs

One area that our state will need to shore up to develop an innovation economy is to increase investments in education in every segment from K-12 to post-secondary education (vocational, undergraduate, and graduate education). Access to an educated workforce is a critical component of an innovation economy. The envisioned Office of Science and Innovation would work with the Science and Innovation Council to develop a long-term strategic plan and sustainable funding model to address Oklahoma's educational shortfalls. Oklahoma could dedicate a portion of incoming federal funds to establish a Permanent School Fund and identify additional revenue streams. Oklahoma needs to develop a strategy to encourage more students to pursue STEM degrees, offering incentives for community colleges and regional and research universities to graduate more students in STEM.

7. Secure Public and Private Financing to Fund Recommendations

The cost to implement this strategic plan could be substantial. However, the price of not investing is even higher. Failure to invest substantially in the three strategic industries will lead to Oklahoma falling further and further behind in growing our state economy.



OCAST

Oklahoma Center for the Advancement of Science & Technology

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