



EPSCoR Funding Impact in Oklahoma

Science and Engineering

- EPSCoR researchers are developing nanostructure-based electrically conducting polymers for applications as chemical and biological sensors, including a nanotechnology-based infrared laser technique used in sensitive diagnosis of medical disease.
- EPSCoR scientists are studying the genes of biomass plants, such as switchgrass, a native 'big mass' grass in Oklahoma, to improve growth and increase the plants' resistance to disease and extreme weather conditions.
- EPSCoR played an instrumental role in promoting weather-related research in Oklahoma, which has resulted in the permanent home of the National Weather Center in Norman, OK.



Energy

- EPSCoR scientists and engineers are improving the conversion of popular grasses in Oklahoma into usable biofuels. Oklahoma has the potential to be the leading state in the conversion of cellulosic biomass to ethanol and hydrocarbon fuels.
- EPSCoR researchers have developed new processes based on specialized nanoparticle technology developed in Oklahoma used to accelerate reactions at the interface of water and oil; among the applications is the conversion of biomass in the refinery process or in enhanced oil recovery processes.

Workforce Development

- EPSCoR is increasing the number of highly trained MS and PhD graduates in Math, Science, and Engineering. State matching support for NSF EPSCoR Research Infrastructure Improvement (RII) awards has led to the hiring and support of 21 new faculty members.
- Development of biorefineries resulting from groundbreaking bioenergy research has the potential of generating \$13.6 billion in economic activity and creating an estimated 135,000 new jobs for Oklahomans.
- Oklahoma EPSCoR outreach programs (2008-2013) have reached more than 30,000 individuals, including 14,713 K-12 students, 727 K-12 teachers, 8,557 university students, and 2,109 university faculty members.

Commercialization

- EPSCoR research has underpinned the establishment of a nanotechnology industry in Oklahoma. Private sector nanotechnology R&D in Oklahoma has grown to more than 20 companies.
- State-of-the-art weather prediction technology has led to the establishment of a new company in Norman, OK, that has shown three-year growth of 41 percent and generated \$7.5 million revenue in 2011. This company provides industries, such as airlines, with accurate weather information that saves energy and raises profits.
- EPSCoR researchers are studying the characteristics of storms and lightning discharges to improve the timeliness and reliability of lightning hazard warning decisions. Researchers collaborated with Campbell Scientific in the establishment of a field-meter network of detectors that report data to a central station for the protection of the public and industry.
- EPSCoR researchers are developing advanced composite materials solutions for enhanced long-term durability in terrestrial and space environments; technology transferred resulted in a joint venture between Blue Energy Fuels and Tulsa Gas Technologies to manufacture and market natural gas storage and composite pressure vessel and composite over-wrapped pressure vessels delivery systems.



- Working with i2E, Inc., a private not-for-profit corporation focused on growing technology-based companies in Oklahoma, EPSCoR provided commercialization vouchers to future entrepreneurs in the state which has resulted in 119 technologies assessed and 17 new start-up companies.
- Research initiated by EPSCoR funding resulted in the development and patenting of a radiation dosimeter which is now used in hospitals and nuclear facilities worldwide and established an affiliate company for Landauer, Inc. in Stillwater, OK. In 2012, the device monitored 1.8 million workers and generated \$108 million in revenue.



Cyberinfrastructure

- An RII C2 award has established the Oklahoma Optical Initiative which will provide substantial increases in connectivity rates for many research institutions in our state and will transform Oklahoma’s existing research ring from routed to optical.
- EPSCoR researchers are developing cyberinfrastructure tools that will create an opportunity for knowledge discovery and education across complex environmental phenomena. The scientific focus is on grassland ecology in the central plains, which is second only to the arctic tundra in sequestering carbon below ground.

Outreach

- A partnership between OK EPSCoR and the Oklahoma Museum Network provided funds for over 12,000 K-12 students across our state (many from rural areas) to visit one of the five science-based museums in Oklahoma. During the past five years, 30,000 additional Oklahomans have benefited from various additional EPSCoR-sponsored outreach and education programs.

Funding

Current Active Oklahoma EPSCoR/IDeA Awards

Program	Award	Amount	Type of Award	
NSF	EPSCoR	\$24 million	Research Infrastructure	(1 awards)
NIH	IDeA	\$18.4 million	INBRE	(1 award)
NIH	IDeA	\$81.5 million	COBRE	(8 awards)
NIH	IDeA	\$20.3 million	OSCTR	(1 awards)
NASA	EPSCoR	\$3.3 million	Research Infrastructure	(4 awards)

NSF EPSCoR RII Track-1 Awards		New Funding Generated*
2001-2008	\$15,970,000	\$50,000,000
2008-2013	\$15,000,000	\$70,500,000
2013-2014	\$ 8,000,000	\$41,500,000
Total	\$38,970,000	\$162,000,000

*Does not include funds from the NSF RII awards or State Funds

For more information about Oklahoma EPSCoR:

Visit our website: www.okepscor.org

Call: 405.744.9964