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# RESEARCH FUELS ECONOMY

## *EPSCoR Helps Stir Economic Development In Nebraska*

**The Experimental Program to Stimulate Competitive Research aims to increase and enhance science and engineering research capacity in states like Nebraska. Since 1991 Nebraska's higher education institutions have received more than \$159 million through the efforts of EPSCoR/IDeA (the Institutional Development Award Program). That money has helped not only in funding research, it's also boosted the state's economy.**

By F. Fred Choobineh and Pete Kotsiopoulos

Behind the scenes in Nebraska—amid college corridors and capitol hallways, prairies and private industry—university scientists are researching cures for AIDS and avian flu, examining the realities of global warming, studying influences of chemicals in our food, and deciphering secrets to the clean, safe use of fossil fuels.

Something is stirring in Nebraska, as innovation bubbles to the front burner, thanks to a surge of federal dollars and significant new opportunities that bode well for the economic development of this Midwestern state. Behind the scenes, EPSCoR (the Experimental Program to Stimulate Competitive Research) is helping to expand the role of technology exploration in Nebraska, redefine partnerships that link university inventors with paths to commercialization and strengthen the state's economy.

EPSCoR is a federal program designed to increase and enhance science and engineering research capacity in states like Nebraska. The state's EPSCoR agency recognizes the importance of that vision, understanding Nebraska must diversify its investments beyond agriculture and look to significant improvements in the academic research infrastructure.

Since 1991 Nebraska's higher education institutions have received more than \$159 million through the efforts of EPSCoR/IDeA (the Institutional Development Award Program). The money has been used to fuel the discovery and innovation processes, serve as a catalyst for faculty to engage in

statewide scientific research, and help turn research discoveries into energy for Nebraska's economy.

"To remain competitive, we need to encourage new development in industries driven by innovation," Nebraska Gov. Dave Heineman said. "Opportunities to expand the research being done in our state are important to maintaining a competitive edge in this modern economy where advances in research are helping foster new business and job growth."

Across Nebraska, in fact, leaders are beginning to comprehend the major economic impact research universities can have on the state, the region and the nation—and that stronger universities translate into stronger research and stronger economic development. EPSCoR has been particularly successful in supporting this endeavor, understanding that if Nebraska is to stay competitive in the national and global marketplace, our state must expand the science and technology base of expertise to make it a more attractive venue for incoming industrial investment.

The National Science Foundation (NSF) started the EPSCoR program in 1979 under a congressional mandate, and Nebraska was designated an EPSCoR state in 1991. Each agency has its own unique flavor, and the Nebraska program has targeted university research and economic development as the foundation of its core mission. The result is a unique partnership of higher education, private industry, and state and federal

agencies, featuring a powerful alliance of the state's four major research universities: Creighton University (CU), the University of Nebraska-Lincoln (UNL), the University of Nebraska Medical Center (UNMC) and the University of Nebraska at Omaha (UNO).

"The university recognizes the considerable potential of this initiative," said Charles Wilson, chair of the University of Nebraska Board of Regents. "There is power in the collaborative efforts among our universities, and power in the recognition that academic research is imperative for our state."

Here's how the system works: Participating federal agencies allocate part of their budgets to EPSCoR programs. Then all EPSCoR states—jurisdictions that historically have received lesser amounts of federal research money, such as Nebraska—are eligible to compete for those federal research dollars. EPSCoR funding for academic research has nearly tripled since 1991, according to the Association of University Technology Managers (AUTM).

Nebraska's EPSCoR has done well. The program is administered by the University of Nebraska's central administration and a committee appointed by the governor. EPSCoR officials oversee the selection process of research proposals ensuring the investments are congruent with the state vision for economic development as well as for the strategic science and technology plans. Attracting considerable funding from federal agencies such as the National Science Foundation and the National In-



*Dr. Michael Meagher, a researcher at the University of Nebraska-Lincoln, received a University-Industry Research and Development Partnership Award from Nebraska EPSCoR for his work with the Schering-Plough Animal Health Corporation. The Partnership Award is a collaborative effort between a university researcher and a Nebraska business enterprise.*

stitutes of Health, university faculty are involved in collaborative research that can change the world: research into biofuels, global warming, biomedical procedures, cures for viral diseases.

University research has become a big business, according to the AUTM, which found that in 2005 major universities had received about \$40 billion in research and development funding. New NSF statistics indicate the University of Nebraska is part of that wave with \$333.1 million in R&D spending for 2006 and a ranking of No. 27 among all public universities in the United States (up six places and an 11 percent spending increase from the previous year).

“This research has both immediate and long-term benefits to Nebraska,” said University of Nebraska President James B. Milliken. “The Bureau of Labor Statistics reports that every \$1 million of academic R&D spending supports about 33 jobs in Nebraska. Since the university spent about \$333 million in research and development last year, that means the creation of almost 11,000 jobs.

“Longer term, the benefits are even greater. Innovative research is a talent magnet for excellent faculty and students. It also attracts the interest of the private sector and can be the basis for partnerships, investment, and ultimately new companies and new jobs that sustain business growth, and keep our brightest young graduates in the state. Research contributes to an environment in which innovation is valued and rewarded: an environment that makes local, national and international businesses sit up and take notice,” Milliken said.

Bottom line—EPSCoR’s goal is to leverage these research dollars into economic growth as the agency constantly explores additional programs to improve the state’s research and economic environment.

The Nebraska Engineering, Science and Technology Internship Program links students with private and public sectors to

support technology transfer and economic development. Since 2001 when the program was created, 79 students from six colleges and universities have been matched with 50 Nebraska business enterprises. Steve Cass, from the Nebraska Center for Excellence in Electronics, explained: “As a not-for-profit entity, charged with assisting Nebraska’s manufacturers in getting products to market, we got additional research staff to track down and develop programs to help manufacturers.”

The University-Industry R&D Partnership Program was recently developed to foster collaboration for research and development between Nebraska business, industry and academia.

For the last three years Nebraska EPSCoR/IDeA has co-sponsored an annual research conference, inviting community leaders from across the state to learn about and recognize the significance of investing in research and innovation, and the importance of forming public-private partnerships.

The first Nebraska Research Expo in 2005 brought together faculty, graduate students and businesspeople for sessions on topics such as bioinformatics, nutritional genomics, cell biology, nanomaterials and wireless communications. In 2006 the event grew to include a research expo as well as the first Nebraska Innovation Forum, showcasing research but also encouraging an exchange of ideas among businesspeople, scientists, state and federal legislators. That fertile exchange became the impetus to develop an innovative investment consortium called the Nebraska Angels, a group created to provide and attain funding for new Nebraska technology start-up companies.

The initiative continued to gain momentum. Last winter Nebraska EPSCoR/IDeA partnered with the University of Nebraska and Bio Nebraska to co-sponsor the third annual Research and Innovation Conference, a combination of the two events that

pulled together hundreds of community and state leaders, and created new connections for those conducting cutting-edge research and those investing in commercial enterprises.

“There is fantastic research and innovation occurring in Nebraska,” said Julie Karavas, president of Bio Nebraska. “The Research and Innovation Conference helped provide the information and tools necessary to transform ideas into commercially viable products and services, and provided the necessary business tools to ensure inventors have the business structure needed to support their ideas.”

Planning has already started for the 2008 Research and Innovation Conference, which will provide further training for beginning entrepreneurs, and a broader assessment of the impact that research investment has on Nebraska’s economy. NU and CU faculty members are now tracking bioscience investments and entrepreneurial initiatives in the state with particular attention to how they affect attraction, development and retention of human capital, as well as estimated impacts on state and local tax revenues.

Nebraska is at a pivotal point in 2007. Community leaders are recognizing the value of EPSCoR and the value academic research can bring to economic and job growth. The excitement is contagious and the movement is stirring energy and momentum.

Nebraska is on the march. There’s a bright economic future here, and officials are optimistic about what that means for the prospects of Nebraskans.

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