

## NATIONAL SCIENCE FOUNDATION

A partnership of state and federal government, higher education, and private industry

Since 1991, EPSCoR/IDeA federal programs have awarded more than \$346 million to Nebraska; this total includes more than \$112 million from NSF and \$234 million from NIH. These programs support a vital research ecosystem that promotes collaboration and trains future generations of scientists and engineers. Nebraska's EPSCoR/IDeA researchers create solutions to society's grand challenges in the fields of energy, defense, agriculture, the environment, and public health.

### NSF EPSCoR GRANTS IN NEBRASKA

#### Research Infrastructure Improvement (RII) Track 1 (2016-21)

This \$20 million grant funds a Nebraska collaboration, the **Center for Root & Rhizobiome Innovation**, focusing on soil-plant systems to aid crop productivity and help mitigate world hunger. In addition to scientific research, a portfolio of workforce development programs train the next generation of scientists—via summer camps, high school internships in university laboratories, and mobile labs including molecular biology. Funding also supports related curriculum development at Nebraska's tribal colleges.

RII Track 2 (2014-17) This \$6 million grant, a partnership with Kansas EPSCoR, invests in **Imaging and Controlling Ultrafast Dynamics of Atoms, Molecules, and Nanostructures**. The work aims to benefit laser technology, solar energy capture, nanotechnology, and optogenetics (the neuroscientific study of genetically light-sensitized neurons). This consortium's education, outreach, and workforce development activities involve the states' small colleges, summer workshops for high school physics teachers, and a variety of research experiences for students.

RII Track 3 (2013-18) For Native Americans' **Chemistry Curriculum** (\$749,285), University of Nebraska-Lincoln chemistry faculty develop sustainable, culturally-relevant chemistry courses for Nebraska's tribal colleges.

Focused EPSCoR Collaborations (FECs) Nebraska scientists are involved in several collaborative NSF projects:

- **LRN Network** | Lincoln-Reno-Newark Coalition for Cognitive Neuroscience Research, \$6 million (in collaboration with Delaware & Nevada); Nebraska team leads: Matt Johnson and Mike Dodd (UNL)
- **Dev-CoG** | Developmental Chronnecto-Genomics: Quantifying Brain Dynamics and Related Genetic Factors in Childhood, co-PI: Tony Wilson (UNO/UNMC), \$5.9 million (in collaboration with New Mexico & Louisiana)
- **CLOUD MAP** | Collaboration Leading Operational UAS Development for Meteorology and Atmospheric Physics, Nebraska team lead: Adam Houston (UNL), \$6 million (in collaboration with Oklahoma & Kentucky)
- **SOLAR CELLS**: Low-Cost, Efficient Next-Generation Solar Cells for the Coming Clean Energy Revolution, co-PI: Jinsong Huang (UNL), \$4 million (in collaboration with Rhode Island)

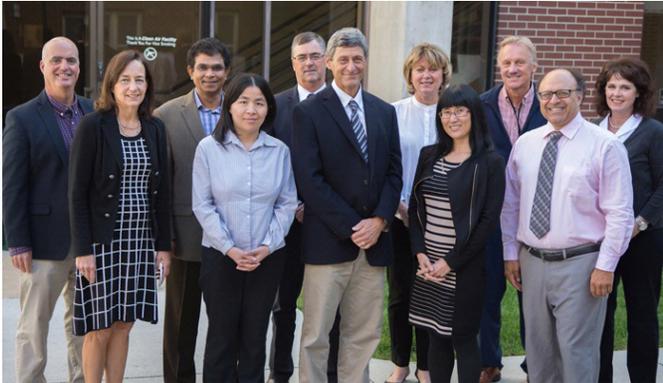
### ECONOMIC DEVELOPMENT

With our **Nebraska Engineering, Science and Technology Internship Program**, university students receive matching support for up to 6-month internships with Nebraska companies in STEM fields. Since 2001, more than 170 students have been employed by 100 businesses via NESTIP. *The State of Nebraska recently began a similar program on a larger scale.*



## INSTITUTIONAL DEVELOPMENT AWARD

The National Institutes of Health's (NIH) Institutional Development Award (IDeA) program funds Centers for Biomedical Research Excellence (COBRE), IDeA Networks of Biomedical Research Excellence (INBRE), and Clinical and Translational Research (CTR) awards.



### Great Plains IDeA-CTR Network announced

In October 2016, the University of Nebraska Medical Center (UNMC) announced its largest grant to date: nearly \$20 million from the National Institutes of Health's Institutional Development Award program (NIH IDeA) involving partner institutions in four Plains states. The funding will create the Great Plains IDeA-CTR Network: helping early career researchers develop into independent scientists, and increasing the infrastructure and other resources needed to support clinical and translational research.

Matthew Rizzo, UNMC professor and chairman of the department of neurological sciences, is the five-year project's principal investigator. Rizzo said the work will focus on expanding knowledge about approaches needed to address diseases of aging and brain health.

Partner institutions include the University of Nebraska-Lincoln, University of Nebraska at Omaha, University of Nebraska at Kearney and Boys Town National Research Hospital, as well as University of South Dakota, University of North Dakota, North Dakota State University, and the University of Kansas Medical Center.

Jennifer Larsen, M.D.—UNMC's vice chancellor for research and a member of Nebraska EPSCoR's State Committee—described UNMC's efforts in building "clinical/translational research resources steadily for almost a decade to prepare us to compete for this or other large clinical/translational grant awards." She added: "Receiving this award shows we 'have arrived,' and the award itself will further expand the resources available for our faculty to continue to successfully compete on a national level."

Rizzo said clinical and translational research can take knowledge from "bench to bedside, cells to souls" to help people and improve health.

### NEBRASKA'S COBRE & INBRE AWARDS

**Center for Integrated Biomolecular Communication** | University of Nebraska Lincoln, \$11.3 million

**Center for Perception and Communication in Children** | Boys Town National Research Hospital, \$11.2 million

**Center for Research in Human Movement Variability** | University of Nebraska at Omaha, \$10.1 million

**Nebraska Center for Prevention of Obesity Diseases Through Dietary Molecules** | University of Nebraska-Lincoln, \$11.3 million

**Nebraska Center for Drug Delivery and Nanomedicine** | University of Nebraska Medical Center, \$10.65 million

**Nebraska Center for Cellular Signaling** | University of Nebraska Medical Center, \$9.8 million

**Nebraska Center for the Molecular Biology of Neurosensory Systems** | University of Nebraska Medical Center, \$10.2 million

**Nebraska INBRE Program** | University of Nebraska Medical Center, \$16.2 million

**REDOX Biology Center** | University of Nebraska-Lincoln, \$10.8 million