



*Established Program to Stimulate Competitive Research*

## NATIONAL SCIENCE FOUNDATION

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

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Since 1991, EPSCoR/IDEA federal programs have awarded more than \$377 million to Nebraska, including more than \$123 million from NSF and \$216 million from NIH. These programs support a vital research ecosystem for Nebraska: advancing scientific collaborations and training future generations of scientists and engineers.

### NSF EPSCoR GRANTS IN NEBRASKA

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

PI: Fred Choobineh, co-PIs Edgar Cahoon and James Alfano (UNL)

This \$20 million grant funds Nebraska's collaborative **Center for Root & Rhizobiome Innovation (CRRI)**, researching soil-plant systems to aid crop productivity and help mitigate world hunger. In addition, CRRI's portfolio of workforce development programs trains 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 by the University of Nebraska-Lincoln (UNL) at Nebraska's tribal colleges.

#### RII Track 2 / Focused EPSCoR Collaborations

Nebraska scientists are funded for several multi-state projects:

- **Comparative Genomics & Phenomics Approach to Discover Genes Underlying Heat Stress Resilience in Cereals (2017-21)**, PI: Harkamal Walia (UNL), \$5.78M (in collaboration with Arkansas and Kansas)
- **UNVEIL: Using Natural Variation to Educate, Innovate, and Lead A Collaborative Research Network to Advance Genome-to-Phenome Connections in the Wild (2017-21)**, Nebraska team leads include Jay Storz, Kristi Montooth and Colin Meiklejohn (UNL), \$4M (in collaboration with Montana)
- **G2P in VOM: Experimental and Analytical Framework for Genome to Phenome Connections in Viruses of Microbes (2017-21)**, Nebraska team lead: James Van Etten (UNL), \$2.99M (in collaboration with Delaware, Hawaii, and Rhode Island)
- **LRN Network: Lincoln-Reno-Newark Coalition for Cognitive Neuroscience Research (2016-2020)**, Nebraska team leads: Matt Johnson and Mike Dodd (UNL), \$6M (in collaboration with Delaware and Nevada)
- **CLOUD MAP: Collaboration Leading Operational UAS Development for Meteorology and Atmospheric Physics (2015-19)**, Nebraska team lead: Adam Houston (UNL), \$6M (in collaboration with Oklahoma and Kentucky)
- **Dev-CoG: Developmental Chronnecto-Genomics: Quantifying Brain Dynamics and Related Genetic Factors in Childhood (2015-19)**, Nebraska team lead: Tony Wilson (UNO/UNMC), \$5.9M (in collaboration with New Mexico and Louisiana)
- **Imaging and Controlling Ultrafast Dynamics of Atoms, Molecules and Nanostructures (2014-18)**, Nebraska team leads: Anthony Starace, Herman Batelaan, and Martin Centurion (UNL), \$6M (in collaboration with Kansas)

RII Track 3 (2013-18) For **Framing the Chemistry Curriculum** (\$749,285), UNL chemistry faculty partner with Nebraska's tribal colleges to develop sustainable, culturally-relevant chemistry courses for Native Americans.

### ECONOMIC DEVELOPMENT

With our **Nebraska Engineering, Science and Technology Internship Program (NESTIP)**, Nebraska's college/university students receive matching support for up to 6-month internships with in-state, STEM-field companies. Since 2001, 173 students have been employed by nearly 100 different organizations via NESTIP.



## INSTITUTIONAL DEVELOPMENT AWARD

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



IDeA COBRE grants strengthen institutional research capabilities of a center by training and mentoring early career faculty to build robust, independent research programs organized around a central theme. Since 2000, COBRE grants have brought \$138.8 million for biomedical and behavioral research in Nebraska.

### RECENT / EXISTING COBREs & INBRE

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

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



### NEWEST COBREs

#### **Center for Integrated Biomolecular Communication (CIBC)**

University of Nebraska-Lincoln | \$11.3 million

*Principal Investigators (PIs): James Takacs, Ph.D. and Concetta diRusso, Ph.D.*  
CIBC's interdisciplinary research collaborations combine new techniques to investigate cellular-level miscommunications caused by pathogens or environmental factors which can contribute to complex diseases such as cancer and diabetes.

#### **Center for Perception and Communication in Children (CPCC)**

Boys Town National Research Hospital | \$11.2 million

*PI: Walt Jesteadt, Ph.D.*

CPCC projects include: the impact of mild hearing loss on auditory perception, the impact of hearing loss on speech communication by Spanish-English bilinguals, perception and production of audiovisual speech in children with hearing loss, temporal resolution in children with hearing loss, and gaze stability in children with hearing and vestibular loss.

#### **Center for Research in Human Movement Variability (CRHMV)**

University of Nebraska at Omaha | \$10.1 million | *PI: Nick Stergiou, Ph.D.*

This center's research addresses how bodies control and adjust movement patterns, and how variability in movement can tie to, cause, or be symptomatic of a number of wide-ranging disorders. Project areas include peripheral arterial disease, stroke, chronic obstructive pulmonary disease (COPD) and motor development.

#### **Nebraska Center for Prevention of Obesity Diseases Through Dietary Molecules (NPOD)**

University of Nebraska-Lincoln | \$11.3 million | *PI: Janos Zemleni, Ph.D.*

NPOD studies the molecular level of obesity, to help in understanding and overcoming challenges in this widespread public health issue. NPOD contributes strategies addressing obesity-related diseases including non-alcoholic fatty liver disease, cardiovascular disease and Type 2 diabetes.