2019

Research and Creative Activity, July 1, 2018-June 30, 2019: Major Sponsored Programs and Faculty Awards for Research and Creative Activity, University of Nebraska-Lincoln

Office of Research and Economic Development, University of Nebraska-Lincoln

RESEARCH

Office of Research and Economic Development

RESEARCH AND CREATIVE ACTIVITY

July 1, 2018 – June 30, 2019

Major Sponsored Programs and Faculty Awards for Research and Creative Activity

University of Nebraska–Lincoln

Bob Wilhelm

Vice Chancellor for Research
and Economic Development

This booklet highlights successes in research, scholarship and creative activity by University of Nebraska–Lincoln faculty during the fiscal year running July 1, 2018, to June 30, 2019.

It lists investigators, project titles and funding sources on major grants and sponsored awards received during the year; fellowships and other recognitions and honors bestowed on our faculty; books published by faculty; performances, exhibitions and other creative activity by our faculty; and patents and licensing agreements issued for products of Nebraska research.

2019 marks the university's 150th anniversary, an exciting time to celebrate our "Prairie University" past while defining the university we want to become in the 21st century. This booklet is a snapshot in time, representing Nebraska's impact, both now and in the future. Our researchers are tackling major societal challenges, from ensuring food security, to protecting valuable natural resources to curbing drug addiction in rural areas, among many others. Nebraska scholars are finding innovative ways to showcase historical figures and milestones through digital archives, expanding the ability to translate these important stories to new audiences.

While metrics cannot convey the full story of our work, they are tangible measures of impact. In FY 2018, Nebraska achieved a record $308 million in total research expenditures, a 26% increase over the past decade. Total sponsored research awards in FY 2019 totaled $165 million, a 14% increase from the previous fiscal year, and a 35% increase over the past decade. That growth trajectory is phenomenal, made possible by our hard work and desire to change the world.

Industry activity driven by the university is contributing to the state's economic growth and development. Investments in Nebraska Innovation Campus are paying off, with 1,430 jobs created statewide in FY 2018 and a total economic impact of $238 million. Additionally, for the second time, the University of Nebraska system is ranked among the top 100 academic institutions receiving U.S. patents, a clear demonstration of our talent and national competitiveness.

As a university, we will continue making strategic investments in research and economic development, with the goal of positioning Nebraska as a leading 21st-century land-grant institution. The university's N150 vision document defines aggressive goals for research growth and integrating research into every aspect of the institution. Soon, Chancellor Ronnie Green will unveil N2025, a five-year strategic plan that includes strategies to achieve a research and creative activity enterprise that approaches $450 million, plus a process for defining and addressing grand challenges that are important to Nebraska and the world.

In my second year as the vice chancellor for research and economic development, I continue to be inspired and impressed by our faculty's dedication. I am pleased to present this record of accomplishments. By pushing the boundaries of research, scholarship and creative activity, Nebraska's growth trajectory will continue to climb.

Bob Wilhelm

CONTENTS

“2019 marks the university’s 150th anniversary, an exciting time to celebrate our “Prairie University” past while defining the university we want to become in the 21st century.

Awards of $5 Million or More

Active awards, July 1, 2018–June 30, 2019

* Indicates new in 2018–2019

Bloom, Kenneth — Physics and Astronomy

U.S. CMS Operations at the LHC

$5,937,263 ..... NSF through Princeton University

1/1/12 – 12/31/21

Swanson, David .....Computer Science and Engineering

Ken Bloom, professor of physics and astronomy, coordinates the U.S. team of the international research team conducting experiments using the Large Hadron Collider (LHC) at CERN, the European Organization for Nuclear Research in Switzerland. This grant from the National Science Foundation enables the UNL team to support the current High-Luminosity LHC (HL-LHC) upgrade project.

Brank, Eve — Center on Children, Families and the Law

Training on Family and Policy Services

$11,268,815 ..... DHHS-ACF through Nebraska Department of Health and Human Services

1/1/18 – 12/31/22

Olson, Kathryn ..... Center on Children, Families and the Law

Eve Brank, professor of psychology and director of the Center on Children, Families and the Law (CCFL), and Kathryn Olson, research assistant professor and assistant director of CCFL, lead this effort to develop and deliver Child and Family Services training consistent with federal and state statutes and policy. With the support of the Nebraska Department of Health and Human Services and the Administration for Children and Families in the U.S. Department of Health and Human Services, the program encompasses development and delivery of child protection and safety training for child protection and safety workers in Nebraska.

Cahoon, Edgar — Biochemistry/Center for Biotechnology/ Center for Plant Science Innovation/ Nebraska Center for Redox Biology

RII Track-1: Center for Root and Rhizobiome Innovation (CRRI)

$10,000,000 ..... NSF-EPSCoR

6/15/16 – 5/31/21

Adamec, Jiri .....Biochemistry/Center for Biotechnology/ Center for Plant Science Innovation/ Nebraska Center for Redox Biology

Alfano, James ..... Plant Pathology/Center for Biotechnology/ Center for Plant Science Innovation/ Nebraska Center for Redox Biology

Clemente, Thomas ..... Agronomy and Horticulture/ Center for Biotechnology/ Center for Plant Science Innovation/ Nebraska Center for Redox Biology

Drijber, Rhae ..... Agronomy and Horticulture/ Center for Biotechnology/ Center for Plant Science Innovation/ Nebraska Center for Redox Biology

Griep, Mark .....Chemistry/Center for Biotechnology/ Center for Plant Science Innovation/ Nebraska Center for Redox Biology

Helikar, Tomas .....Biochemistry/Center for Biotechnology/ Center for Plant Science Innovation/ Nebraska Center for Redox Biology

Herr, Joshua ..... Plant Pathology/Center for Biotechnology/ Center for Plant Science Innovation/ Nebraska Center for Redox Biology

Moriyama, Etsuko .... Biological Sciences/Center for Biotechnology/ Center for Plant Science Innovation/ Nebraska Center for Redox Biology

Russo, Sabrina ..... Biological Sciences/Center for Biotechnology/ Center for Plant Science Innovation/ Nebraska Center for Redox Biology

Schachtman, Daniel ..... Agronomy and Horticulture/ Center for Biotechnology/ Center for Plant Science Innovation/ Nebraska Center for Redox Biology

Schnable, James ..... Agronomy and Horticulture/ Center for Biotechnology/ Center for Plant Science Innovation/ Nebraska Center for Redox Biology

van Dijk, Karin .....Biochemistry/Center for Biotechnology/ Center for Plant Science Innovation/ Nebraska Center for Redox Biology

Walia, Harkamal ..... Agronomy and Horticulture/
Center for Biotechnology/
Center for Plant Science Innovation/
Nebraska Center for Redox Biology
Weber, Karrie ..... Biological Sciences/
Earth and Atmospheric Sciences/
Center for Biotechnology/
Center for Plant Science Innovation/
Nebraska Center for Redox Biology
Yu, Bin ..... Biological Sciences/Center for Biotechnology/
Center for Plant Science Innovation/
Nebraska Center for Redox Biology
Zhang, Chi ..... Biological Sciences/Center for Biotechnology/
Center for Plant Science Innovation/
Nebraska Center for Redox Biology

The University of Nebraska–Lincoln is leading a $20 million, Nebraska-based research effort to improve crop productivity. Funded with a five-year award from the National Science Foundation's Established Program to Stimulate Competitive Research, or EPSCoR, this project draws upon a range of expertise in Nebraska. The university is teaming with scientists at the University of Nebraska Medical Center, University of Nebraska at Kearney and Doane University on the Center for Root and Rhizobiome Innovation. Project co-leaders are Edgar Cahoon, George W. Holmes Professor of Biochemistry and director of the Center for Plant Science Innovation, and James Alfano, Charles Bessey Professor of Plant Pathology. The research uses a holistic strategy to study root and soil microbe interactions and to develop new biological tools to enhance crop performance.

Claes, Daniel — Physics and Astronomy

U.S. CMS Phase-1 Upgrades
$11,479,310 ..... NSF
6/15/14 – 5/31/19

Physicist Daniel Claes leads a collaboration involving eight universities to upgrade the Compact Muon Solenoid particle detector, a key component of the world's largest physics experiment. With a five-year, nearly $11.5 million grant from the National Science Foundation, the team is working to increase the effectiveness of a vital component of the Large Hadron Collider at CERN laboratory in Switzerland, the supercollider that made discovery of the Higgs boson possible. The Nebraska team was part of the multi-institutional collaboration that built the original CMS experiment, one of two large particle detector experiments at the Large Hadron Collider. With this NSF grant, they now lead a large research partnership to upgrade the detector in stages through 2019. Their collaborators are at the University of Kansas, University of Illinois at Chicago, Rutgers University, Cornell University, SUNY Buffalo, Purdue University Calumet, Notre Dame University and Northeastern University.

Dombrowski, Kirk — Sociology/ Rural Drug Addiction Research Center

*Rural Drug Addiction Research Center
$11,854,178 ..... NIH-NIGMS
4/5/19 – 2/29/24
Bevins, Rick ..... Sociology/ Rural Drug Addiction Research Center
Khan, Bilal ..... Sociology/ Rural Drug Addiction Research Center
Tyler, Kimberly .... Sociology/ Rural Drug Addiction Research Center

Under the leadership of Kirk Dombrowski, John Bruhn Professor of Sociology, a research center focused on understanding and addressing drug addiction in the rural Midwest has been established with an $11.85 million, five-year grant from the National Institutes of Health. The Rural Drug Addiction Research Center will conduct cutting-edge research into understanding the extent and nature of rural addiction, develop evidence-based treatment methods and support outreach and policy efforts to help reduce addiction and overdoses. The center's research addresses a wide range of topics, including the neuroscience of polysubstance addiction, cognitive implications of long-term use and the social relationships between rural drug use and violence exposure. The center also seeks to identify effective intervention techniques attuned to the region's specific conditions.

Graef, Michelle — Center on Children, Families and the Law

Quality Improvement Center for Workforce Development
$15,000,000 ..... DHHS-ACF
9/30/16 – 9/29/21
Ells, Mark ..... Center on Children, Families and the Law
Paul, Megan ..... Center on Children, Families and the Law
Stephenson, Kate ..... Center on Children, Families and the Law

The University of Nebraska–Lincoln has launched the Quality Improvement Center for Workforce Development with a five-year, $15 million grant to the Center on Children, Families and the Law from the U.S. Department of Health and Human Services Administration for Children and Families-Children's Bureau. Under the leadership of Michelle Graef, research associate professor in the Center on Children, Families and

the Law, this multidisciplinary project studies and tests promising strategies to help child welfare agencies recruit and retain staff workers. Nebraska collaborates with three national child welfare consultants and researchers at the University of Colorado, Denver; University of Louisville; and University of Tennessee, Knoxville. The center draws on a range of expertise, including social work, industrial organizational psychology, human resource management, educational psychology, implementation science and the law.

Heng-Moss, Tiffany — College of Agricultural Sciences and Natural Resources

Developing the Next Generation of Rwandan Agricultural Leaders
$47,492,836 . . . . . Various Associations/Foundations
7/1/15 – 5/31/23
Davis, Joshua . . . . . Global Engagement
Waller, Steven . . . . . Center for Grassland Studies

With grants totaling more than $47,000,000, the College of Agricultural Sciences and Natural Resources (CASNR) at the University of Nebraska–Lincoln is partnering with various associations and foundations to provide educational opportunities for Rwandan students to participate in the Undergraduate Scholars Program (CUSP). In support of a Practical Agriculture Institute in Rwanda, Rwandan students are identified and selected to participate in CUSP to pursue a Bachelor of Science degree in Integrated Science – an individualized program of study focused on conservation agriculture, entrepreneurship, leadership and innovative thinking. The students' degree programs are specifically designed to be relevant to Rwandan agricultural production and the country's goal of building resilience into its agricultural ecosystems. CASNR interim dean Tiffany Heng-Moss leads this effort.

Moxley, Rodney — Veterinary Medicine and Biomedical Sciences

Shiga-Toxigenic *Escherichia coli* (STEC) in the Beef Chain: Assessing and Mitigating the Risk by Translational Science, Education and Outreach
$24,808,592 . . . . . USDA-AFRI
1/1/12 – 12/31/19
Thippareddi, Harshavardhan . . . . . Food Science and Technology

Rodney Moxley, Charles Bessey Professor of Veterinary Medicine and Biomedical Sciences, leads a major project involving 12 universities and other institutions to target eight of the most dangerous *E. coli* strains throughout the beef production chain. Funded by a $25 million Agriculture and Food Research Initiative grant from the U.S. Department of Agriculture's National Institute of Food and Agriculture, the project's long-term goal is to reduce the occurrence and public health risks from Shiga toxin-producing *E. coli* in beef, while preserving an economically viable and sustainable beef industry. The project explores the public health, economic and environmental impacts of existing or new intervention strategies on predicted and actual STEC exposure risk. Innovative education, extension and evaluation efforts are intertwined with research on beef chain STEC risk mitigation and decreased numbers of human STEC cases.

Rilett, Laurence — Civil Engineering/ Nebraska Transportation Center

University Transportation Centers Open Competition 2016
$13,000,000 . . . . . DOT
12/5/16 – 9/30/22

The Mid-America Transportation Center, a consortium of academic institutions led by the University of Nebraska–Lincoln, leads a five-year, $13 million research center, funded by the U.S. Department of Transportation through the Fixing America's Surface Transportation Act, to improve transportation safety in Nebraska and neighboring states. The center, which emphasizes challenges facing rural areas and underserved communities, was designated the University Transportation Center of its four-state region after a competitive review. Laurence Rilett, MATC director and the Keith W. Klaasmeyer Chair in Engineering, leads the new research center. Funding enables MATC to leverage its track record of success in transportation research and education to improve safety in the four Region 7 states: Nebraska, Iowa, Kansas and Missouri. MATC is housed in the university's College of Engineering. Its partner institutions include the University of Nebraska at Omaha, University of Nebraska Medical Center, University of Iowa, University of Kansas, University of Kansas Medical Center, Missouri University of Science and Technology, Lincoln University and Nebraska Indian Community College. The consortium also has partnerships with several private- and public-sector entities, including a longstanding relationship with the Nebraska Department of Transportation

Schachtman, Daniel

Agronomy and Horticulture/ Center for Plant Science Innovation/ Center for Biotechnology

Systems Analysis of the Physiological and Molecular Mechanisms of Sorghum Nitrogen Use Efficiency, Water Use Efficiency and Interactions with the Soil Microbiome

$13,460,684 . . . . . DOE
8/15/15 – 8/14/20
Dweikat, Ismail . . . . . Center for Plant Science Innovation/ Agronomy and Horticulture
Ge, Yufeng . . . . . Biological Systems Engineering

Daniel Schachtman, professor of agronomy and horticulture and director of the university's Center for Biotechnology, leads a $13.5 million, multi-institutional research effort to improve sorghum as a sustainable source for biofuel production. A five-year grant from the U.S. Department of Energy funds this highly collaborative project that takes a comprehensive approach to understanding how plants and microbes interact and to learn which sorghum germplasm can grow with less water and nitrogen. The University of Nebraska–Lincoln is collaborating with scientists at Danforth Plant Science Center, Washington State University; University of North Carolina-Chapel Hill; Boyce Thompson Institute, Clemson University; Iowa State University; Colorado State University and the DOE-Joint Genome Institute.

Takacs, James

Chemistry/Nebraska Center for Integrated Biomolecular Communication

Nebraska Center for Integrated Biomolecular Communication (NCIBC)

$11,271,372 . . . . . NIH-NIGMS
8/15/16 – 7/31/21
Becker, Donald . . . . . Biochemistry/NCIBC
Buan Murphy, Nicole . . . . . Biochemistry/NCIBC
Cerny, Ronald . . . . . Chemistry/NCIBC
Clarke, Jennifer . . . . . Statistics/Food Science and Technology/NCIBC
DiRusso, Concetta . . . . . Biochemistry/NCIBC
Dodds, Eric . . . . . Chemistry/NCIBC
Hage, David . . . . . Chemistry/NCIBC
Harris, Edward . . . . . Biochemistry/NCIBC
Kidambi, Srivatsan . . Chemical and Biomolecular Engineering/NCIBC
Lee, Jaekwon . . . . . Biochemistry/NCIBC
Morton, Martha . . . . . Chemistry/NCIBC
Powers, Robert . . . . . Chemistry/NCIBC
Riethoven, Jean-Jack . . . . . Center for Biotechnology/ NCIBC
Stains, Clifford . . . . . Chemistry/NCIBC
Velander, William . . . Chemical and Biomolecular Engineering/NCIBC
Zhou, You . . . . . Center for Biotechnology/NCIBC

With a five-year, $11.3 million grant from the National Institutes of Health, the University of Nebraska–Lincoln has established a research center focused on investigating cellular-level miscommunications that contribute to complex diseases like cancer, diabetes and chronic liver disease. The NCIBC serves as a hub for interdisciplinary collaborations among Nebraska's biomedical researchers and involves faculty at the University of Nebraska Medical Center, as well. The center, directed by James Takacs, Charles J. Mach University Professor of Chemistry, fosters a systems approach, combining the research activities of chemists, biochemists, engineers and bioinformaticists. It connects researchers developing new molecular probes and analytical techniques with those unraveling molecular mechanisms of diseases.

Tsymbal, Evgeny

Physics and Astronomy/ Nebraska Center for Materials and Nanoscience

Materials Research Science & Engineering Center: Polarization and Spin

$9,629,898 . . . . . NSF
11/1/14 – 10/31/20

The Materials Research Science and Engineering Center (MRSEC) was established in 2002 with a grant from the National Science Foundation and involves scientists from the Departments of Physics and Astronomy, Chemistry, Mechanical & Materials Engineering, and the School of Biological Sciences. MRSEC projects focus on fabricating and studying new magnetic structures and materials at the nanometer scale. The research has applications in advanced computing and data storage, handheld electronic devices, advanced sensors and future medical technologies.

Walia, Harkamal

Agronomy and Horticulture

RII Track-2 FEC: Comparative Genomics and Phenomics Approach to Discover Genes Underlying Heat Stress Resilience in Cereals

$5,783,738 . . . . . NSF-EPSCoR
8/1/17 – 7/31/21
Morota, Gota . . . . . Animal Science
Obata, Toshihiro . . . . . Biochemistry
Yu, Hongfeng . . . . . Computer Science and Engineering
Zhang, Chi . . . . . Biological Sciences
Zhang, Qi . . . . . Statistics

Harkamal Walia, associate professor of agronomy and horticulture, leads a project to explore the effects of high nighttime temperatures on wheat and rice. Temperature stress can lead to severe losses in the yield and quality of crops, especially wheat and rice, two major cereal crops worldwide. With the support of a $5.78 million grant from the National Science Foundation's Established Program to Stimulate Competitive Research (EPSCoR), Walia's team is investigating genes and genetic variants in wheat and rice to identify genetic markers and physiological characteristics tied to heat tolerance. The team also collaborates with researchers from Arkansas State University and Kansas State University.

Wilhelm, Bob — Office of Research and Economic Development

Nebraska Center for Energy Sciences Research
$6,250,000 ..... Nebraska Public Power District
4/1/16 – 3/31/21

The Nebraska Center for Energy Sciences Research is a collaboration between the university and the Nebraska Public Power District. The center was established in April 2006 to support energy research that produces new technologies, processes and systems that provide new or significantly enhanced renewable energy sources, improves the quality of life and boosts economic opportunity. The center fosters interdisciplinary collaboration among Nebraska faculty and with other research institutions, public-sector agencies and private-sector companies with similar interests. The center supports both basic and applied research and has a broad mandate to explore a range of renewable energy opportunities (including biofuels, wind and solar energy), as well as opportunities for energy conservation.

Yoder, Ron — Institute of Agriculture and Natural Resources

Rwandan Institute of Conservation Agriculture (RICA)
$17,210,366 ..... Various Sources
10/13/17 – 12/31/20
Davis, Josh ..... Global Engagement
Heng-Moss, Tiffany .....College of Agricultural Sciences and Natural Resources

The Rwanda Institute for Conservation Agriculture (RICA) is a unique and innovative English language institution dedicated to preparing the next generation of agricultural leaders of Rwanda and East Africa. Under the leadership of Ron Yoder, senior associate vice chancellor for IANR, the University of Nebraska is serving as a critical academic partner, helping to design and implement the curriculum and campus operations, especially during RICA's critical start-up phase. RICA students will learn the principles of conservation agriculture and One Health while emphasizing written communication, leadership and entrepreneurship. Students at RICA will be exposed to six different enterprises including beef cattle and small ruminants, dairy, poultry and swine, row and forage crops, vegetable and tree crops, irrigation and mechanization.

Zempleni, Janos — Nutrition and Health Sciences/ Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules

COBRE: Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules
$11,306,520 ..... NIH-NIGMS
8/5/14 – 5/31/20
Natarajan, Sathish ..... Nutrition and Health Sciences
Sun, Xinghui ..... Biochemistry
Yates, Dustin ..... Animal Science
Yu, Jiujiu ..... Nutrition and Health Sciences

With the support of an $11.3 million grant from the National Institutes of Health's Center of Biomedical Research Excellence (COBRE) program, the university has established the Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules. The center, under the leadership of Janos Zempleni, Willa Cather Professor of Molecular Nutrition, focuses on understanding nutrition and obesity at the molecular level. Answering molecular-level questions regarding obesity and related diseases is a crucial first step toward curbing this national epidemic. The University of Nebraska Medical Center collaborates on the center, which aims to establish a community of nationally recognized researchers in nutrition, genetics, biochemistry, food science, immunology and computer science. The long-term goal is to become a leader in nutrient signaling and the prevention of obesity and obesity-related diseases, including non-alcoholic fatty liver disease, cardiovascular disease and Type 2 diabetes.

Awards of $1 Million to $4,999,999

Active awards, July 1, 2018–June 30, 2019

* Indicates new in 2018–2019

Allen, Craig — **Natural Resources**

NRT-INFEWS: Training in Theory and Application of Cross-scale Resilience in Agriculturally Dominated Social Ecological Systems

$2,998,886 ..... NSF

Munoz-Arriola, Francisco ..... Biological Systems Engineering

Shank, Nancy ..... Public Policy Center

Twidwell, Dirac Jr. ..... Agronomy and Horticulture

Allmand, Matthew — **Extension/Biological Systems Engineering/ Food Science and Technology**

Manufacturing Extension Partnership Center for Nebraska

$1,350,000 ..... DOC-NIST

Barlow, Steven — **Special Education and Communication Disorders**

Somatosensory Modulation of Salivary Gene Expression and Oral Feeding in Preterm Infants

$2,797,503 ..... NIH-NICHD

Becker, Donald — **Biochemistry/ Nebraska Center for Redox Biology**

Redox Biology Center

$4,305,466 ..... NIH-NIGMS

Molecular Mechanisms of Disease

$1,010,195 ..... NIH-NIGMS

Black, Paul ..... Biochemistry

Bellows, Laurie — **Graduate Studies**

TRIO – Ronald E. McNair Postbaccalaureate Achievement Program

$1,171,196 ..... ED

Benson, John — **Natural Resources**

Assessment of Adult Female and Neonatal Mule Deer (*Odocoileus hemionus*) Survival, Movements and Habitat Use in Nebraska

$1,358,070 ..... Nebraska Game and Parks Commission

Bevins, Rick — **Psychology**

Interoceptive Conditioning with Nicotine: Changes in Abuse Liability

$1,786,220 ..... NIH-NIDA

Pharmacological Interventions to Diminish Nicotine-Associated Responding

$1,429,752 ..... NIH-NIDA

Bilder, Christopher — **Statistics**

Group Testing for Infectious Disease Detection: Multiplex Assays and Back-End Screening

$1,137,836 ..... NIH-NIAID

Bloom, Kenneth — **Physics and Astronomy**

SI2-SSI Data Intensive Analysis for High Energy Physics (DIANA/HEP)

$1,001,324 ..... NSF

Bobaru, Florin — **Mechanical & Materials Engineering**

MURI Center for Material Failure Prediction through Peridynamics

$1,003,134 ..... DoD-AFOSR through University of Arizona

Cahoon, Edgar — **Biochemistry/ Center for Plant Science Innovation**

Biochemical Genomics: Deciphering the Chemical Factories of Oilseeds

$1,315,031 ..... NSF through Washington State University

Moriyama, Etsuko ..... Biological Sciences/ Center for Plant Science Innovation

Centurion, Martin — **Physics and Astronomy**

Ultrafast Electron Diffraction from Aligned Molecules

$1,041,385 ..... DOE

Clemente, Thomas — **Agronomy and Horticulture/ Center for Plant Science Innovation**

*RII Track-2 FEC: Functional Analysis of Nitrogen Responsive Networks in Sorghum

$1,337,633 ..... NSF-EPSCoR through HudsonAlpha Institute for Biotechnology

Ge, Yufeng ..... Biological Sciences/ Center for Plant Science Innovation

Schnable, James ..... Agronomy and Horticulture/ Center for Plant Science Innovation

Yang, Jinliang ..... Agronomy and Horticulture/ Center for Plant Science Innovation

Center for Advanced Bioenergy and Bioproducts Innovation
$3,886,388 . . . . . DOE through University of Illinois-Urbana-Champaign
Cahoon, Edgar . . . . . Biochemistry/Center for Plant Science Innovation

Daly, Ed — **Educational Psychology/Nebraska Center for Research on Children, Youth, Families and Schools**

School Psychology Specialization in Toddlers with Autism Spectrum Disorders
$1,249,730 . . . . . ED

Detweiler, Carrick — **Computer Science and Engineering**

NRI: Enabling Unmanned Aerial Systems (UAS) Fire Ignitions in Complex Firefighting Contexts
$1,003,270 . . . . . NSF
Allen, Craig . . . . . Natural Resources
Bradley, Justin . . . . . Computer Science and Engineering
Duncan, Brittany . . . . . Computer Science and Engineering
Pytlik Zillig, Lisa . . . . . Public Policy Center
Twidwell, Dirac Jr. . . . . Agronomy and Horticulture

Dodds, Eric — **Chemistry**

*A Research Program on Advancing Biomedical Glycoproteomics
$1,843,480 . . . . . NIH-NIGMS

Doht, Mitchell — **Extension/Nebraska Local Technical Assistance Program**

Nebraska Local Technical Assistance Program FY 2016
$1,007,028 . . . . . DOT-FHWA through Nebraska Department of Transportation

Dombrowski, Kirk — **Sociology**

Measuring Social Behavior via Dynamic Network Interaction
$1,224,423 . . . . . NIH-NIGMS
Khan, Bilal . . . . . Sociology

Injection Risk Networks in Rural Puerto Rico
$3,211,865 . . . . . NIH-NIDA
Khan, Bilal . . . . . Sociology

Dowben, Peter — **Physics and Astronomy/Nebraska Center for Materials and Nanoscience**

E2CDA: Type I: Antiferromagnetic Magneto-electric Memory and Logic
$3,573,423 . . . . . NSF/Semiconductor Research Corp
Binek, Christian . . . . . Physics and Astronomy/Nebraska Center for Materials and Nanoscience
Sinitskii, Alexander . . . . . Chemistry/Nebraska Center for Materials and Nanoscience
Tsymbal, Evgeny . . . . . Physics and Astronomy/Nebraska Center for Materials and Nanoscience

Duppong Hurley, Kristin — **Special Education and Communication Disorders**

Parent Connectors: An Efficacy Study of Peer Support for Parents of Middle-School Youth with Emotional Disturbance
$3,206,013 . . . . . ED-IES
Torkelson-Trout, Alexandra . . . . . Special Education and Communication Disorders

Dzenis, Yuris — **Mechanical & Materials Engineering**

Optimal Stent Selection for the Femoropopliteal Artery
$1,028,824 . . . . . NIH-NHLBI through UNMC
Desyatova, Anastasia . . . . . Mechanical & Materials Engineering

Engen-Wedin, Nancy — **Teaching, Learning and Teacher Education**

Indigenous Roots Teacher Education Program
$1,174,067 . . . . . ED

Erixson, John — **Nebraska State Forest Service**

Cooperative Forestry Program
$1,972,906 . . . . . USDA-FS

Faller, Ronald — **Midwest Roadside Safety Facility/Nebraska Transportation Center**

*Midwest States Pooled Fund Roadside Safety Program Year 29
$1,235,000 . . . . . DOT-FHWA through Nebraska Department of Transportation
Bielenberg, Robert . . . . . Midwest Roadside Safety Facility/Nebraska Transportation Center
Lechtenberg, Karla . . . . . Midwest Roadside Safety Facility/Nebraska Transportation Center
Rasmussen, Jennifer . . . . . Midwest Roadside Safety Facility/Nebraska Transportation Center
Rosenbaugh, Scott . . . . . Midwest Roadside Safety Facility/Nebraska Transportation Center
Stolle, Cody . . . . . Midwest Roadside Safety Facility/Nebraska Transportation Center

Fischer, Jean — **Nutrition and Health Sciences**

Supplemental Nutrition Assistance Program (SNAP-ED)
$1,771,292 ..... USDA-FNS through Nebraska Department of Health and Human Services
Behrends, Donna ..... Nutrition and Health Sciences
Sehi, Natalie ..... Nutrition and Health Sciences

Fontaine, Joseph — **Natural Resources**

Assessing the Effects of Habitat Incentive Programs and Public Access Programs on Pheasant Population Dynamics and Hunter Harvest
$1,989,522 ..... Nebraska Game and Parks Commission
Damsky, David ..... Natural Resources
Foggia, Jennifer ..... Natural Resources
Reed, Tyler ..... Natural Resources

Use and Satisfaction of Public Hunting Opportunities
$1,938,757 ..... DOI-GS through Nebraska Game and Parks Commission
Martin, Dustin ..... Natural Resources

Forbes, Cory — **Natural Resources**

DRK-12 High School Students Climate Literacy through Epistemology of Scientific Modeling
$1,136,602 ..... NSF

Garcia Ruiz, Hernan — **Plant Pathology/ Nebraska Center for Virology**

Recognition and Recruitment of RNA Viruses into RNA Silencing Pathways
$1,312,105 ..... NIH-NIGMS

Gervais, Sarah — **Psychology**

*Integrating Alcohol Myopia and Objectification to Understand Sexual Assault
$1,097,073 ..... NIH-NIAAA
DiLillo, David ..... Psychology
Dodd, Michael ..... Psychology
Fritz, Matthew ..... Educational Psychology

Grassini, Patricio — **Agronomy and Horticulture**

*Developing Solutions for Closing the Yield Gap in Smallholder Oil Palm Plantations in Indonesia
$4,028,819 ..... Norwegian Ministry of Foreign Affairs

Guo, Jiantao — **Chemistry**

Improve the Safety of an Efficacious Live-Attenuated HIV-1 Vaccine through Unnatural Amino Acid-Mediated Suppression of Blank Codon
$1,919,552 ..... NIH-NIAID
Li, Qingsheng ..... Biological Sciences
Niu, Wei ..... Chemistry

Hage, David — **Chemistry**

Chromatographic Studies of Functional Proteomics
$1,075,264 ..... NIH-NIDDK

Harris, Edward — **Biochemistry**

Liver-Mediated Clearance of Low Molecular Weight Heparins
$1,486,339 ..... NIH-NHLBI
Dodds, Eric ..... Chemistry

Harwood, David — **Earth and Atmospheric Sciences/ Antarctic Drilling Program**

SALSA Project Hot Water Drill Operations with WISSARD Main Drill and Parts of UNL Roving Drill (Prime Mover)
$1,333,019 ..... NSF through Dartmouth College
McManis, James ..... College of Engineering

Hebert, Michael — **Special Education and Communication Disorders/ Nebraska Center for Research on Children, Youth, Families and Schools**

*Project VIEW: Visual Impairments Education in Writing
$1,399,158 ..... ED-IES
Bovaird, James ..... Educational Psychology/ Nebraska Center for Research on Children, Youth, Families and Schools
Koziol, Natalie ..... Nebraska Center for Research on Children, Youth, Families and Schools
Savaiano, Mackenzie ..... Special Education and Communication Disorders/ Nebraska Center for Research on Children, Youth, Families and Schools

Hein, Gary — **Doctor of Plant Health Program**

A Predictive Model to Increase Adoption of IPM of a Mite-Virus Disease Complex in Wheat
$3,375,000 ..... USDA-AFRI
Bradshaw, Jeffrey ..... Panhandle Research and Extension Center
Golick, Douglas ..... Entomology
Wegulo, Stephen ..... Plant Pathology
Zygielbaum, Arthur ..... Natural Resources

Helikar, Tomas — **Biochemistry**

*Innovating Life Sciences Education
through Computational Modeling and Simulations
$1,896,570 ..... NSF
Dauer, Joseph ..... Natural Resources
Smith, Wendy ..... Center for Science, Mathematics and Computer Education

A Predictive Multi-scale Model of the Immune System:
An Integrated Resource for Interdisciplinary Applications
$1,780,567 ..... NIH-NIGMS

An Innovative Computational Modeling Intervention
to Facilitate Learning of Biology Using
Simulation and Dynamical Systems Approaches
$2,321,012 ..... NSF
Brassil, Chad ..... Biological Sciences
Dauer, Joseph ..... Natural Resources
Harris, Steven ..... Plant Pathology

Houston, Adam — **Earth and Atmospheric Sciences**

RII Track-2 FEC: Unmanned Aircraft System
for Atmospheric Physics
$1,454,757 ..... NSF through Oklahoma State University
Detweiler, Carrick ..... Computer Science and Engineering
Pytlik Zillig, Lisa ..... Public Policy Center
Van Den Broeke, Matthew ..... Earth and Atmospheric Sciences

Irmak, Suat — **Biological Systems Engineering**

Measurement of Growing Season Actual Crop
Evapotranspiration and Crop Coefficients, and Dormant
Season Evaporative Losses for Key Vegetation Surfaces
in the Central Platte Natural Resources District
$1,409,675 ..... Central Platte NRD

Jacobson, Beth — **Student Affairs**

UNL Educational Talent Search
$2,322,665 ..... ED

Johnson, Matthew — **Psychology/ Center for Brain, Biology and Behavior**

RII Track-2 FEC: Neural Networks Underlying the Integration
of Knowledge and Perception
$1,187,503 ..... NSF through University of Delaware
Dodd, Michael ..... Psychology/ Center for Brain, Biology and Behavior

Johnson, Scott — **Biological Process Development Facility**

Process Research, Development and
Manufacturing of 5P12 RANTES
$4,204,159 ..... Mintaka Foundation for Medical Research
Buchholz, Wallace ..... Biological Process Development Facility

Khalimonchuk, Oleh — **Biochemistry/ Nebraska Center for Redox Biology**

*Mitochondrial Fidelity and Homeostasis
$1,739,418 ..... NIH-NIGMS

Mechanisms of Mitochondrial Quality Control and Protection
$1,421,695 ..... NIH-NIGMS

Knoche, Lisa — **Nebraska Center for Research on Children, Youth, Families and Schools**

Getting Ready 0-3 (GR03): Supporting the Development of
Infants/Toddlers through an Integrated Parent-Teacher
Relationship-Based Approach
$1,998,928 ..... DHHS-ACF
Hawley, Leslie ..... Nebraska Center for Research on Children, Youth, Families and Schools
Marvin, Christine ..... Special Education and Communication Disorders/ Nebraska Center for Research on Children, Youth, Families and Schools
Raikes, Helen ..... Child, Youth and Family Studies/ Nebraska Center for Research on Children, Youth, Families and Schools
Sheridan, Susan ..... Nebraska Center for Research on Children, Youth, Families and Schools

Kravchenko, Ilya — **Physics and Astronomy**

Particle Physics Research with the CMS Experiment at the LHC
$2,070,000 ..... NSF
Bloom, Kenneth ..... Physics and Astronomy
Claes, Daniel ..... Physics and Astronomy

Lechtenberg, Karla — **Midwest Roadside Safety Facility**

*NYSDOT-MASH-1: MASH 2016 Safety Facility Hardware Evaluations - Phase I System C1 and C3

$3,228,715 ..... DOT-NYDOT through Nebraska Department of Transportation

Faller, Ronald ..... Midwest Roadside Safety Facility
Holloway, Jim ..... Midwest Roadside Safety Facility
Rasmussen, Jennifer ..... Midwest Roadside Safety Facility
Song, Chung ..... Civil Engineering
Steelman, Joshua ..... Civil Engineering
Stolle, Cody ..... Midwest Roadside Safety Facility

Lei, Yuguo — **Chemical and Biomolecular Engineering**

*A Single Conical Tube Device for Precision CAR-T Cells Manufacturing

$1,060,857 ..... NIH-NCI
Viljoen, Hendrik ..... Chemical and Biomolecular Engineering
Xu, Zheng ..... Statistics
Zhang, Chi ..... Biological Sciences

Li, Ming — **Psychology**

Serotonin, Maternal Behavior and Postpartum Depression

$1,468,032 ..... NIH-NIMH

Li, Qingsheng — **Biological Sciences/ Nebraska Center for Virology**

*Next Generation Broadly Neutralizing Antibodies to Clear HIV-1 Reservoir

$1,526,720 ..... NIH-NIAID through University of Maryland

Li, Xu — **Civil Engineering**

Mitigating the Risk of Antibiotic Resistance at Critical Control Points in the Beef Cattle Manure Management Systems

$1,200,000 ..... USDA-NIFA
Bartelt-Hunt, Shannon ..... Civil Engineering
Erickson, Galen ..... Animal Science
Schmidt, Amy ..... Animal Science/Biological Systems Engineering
Wang, Bing ..... Food Science and Technology

Lodl, Kathleen — **Extension**

Child Care and Youth Training and Technical Assistance Project

$3,390,000 ..... USDA-NIFA

Lu, Yongfeng — **Electrical and Computer Engineering**

*3D-Printing of Diamond-Composite Structures using Selective Laser Semi-Melting

$1,187,483 ..... DoD-MDA

Portable Fiber Laser System and Method to Remove Pits and Cracks on Sensitized Surfaces of Aluminum Alloys

$1,975,000 ..... DoD-ONR

Lubben, Bradley — **Agricultural Economics**

North Central Risk Management Education Center

$1,082,736 ..... USDA-NIFA

MacDonald, James — **Animal Science**

Enhancing Animal Protein through Crops and Cattle

$1,000,000 ..... Foundation for Food and Agriculture Research
Awada, Tala ..... Natural Resources
Banerjee, Simanti ..... Agricultural Economics
Blanco, Humberto ..... Agronomy and Horticulture
Drewnoski, Mary ..... Animal Science
Erickson, Galen ..... Animal Science
Okalebo, Jane ..... Natural Resources
Parsons, Jay ..... Agricultural Economics
Redfearn, Daren ..... Agronomy and Horticulture
Suyker, Andy ..... Natural Resources

Mahmood, Rezaul — **Natural Resources**

High Plains Regional Climate Center

$2,804,989 ..... DOC-NOAA
Sorensen, William ..... Natural Resources
Stiles, Crystal ..... Natural Resources

Meiklejohn, Colin — **Biological Sciences**

Investigating the Special Role of Sex Chromosomes in Speciation: Discovering the Molecular Identities, Functions, and Evolutionary Histories of X-Linked Hybrid Male Sterility Genes in *Drosophila*

$1,298,165 ..... NIH-NIGMS

Mendoza-Gorham, Joan — **Student Affairs**

Lincoln Upward Bound

$1,511,785 ..... ED

Upward Bound Math/Science Program

$1,511,785 ..... ED

Molfese, Victoria — **Child, Youth and Family Studies**

Development Implications of Early Childhood Sleep

$1,387,788 . . . . . NIH-NICHD through Indiana University
Molfese, Dennis . . . . . Psychology
Rudasill, Kathleen . . . . . Educational Psychology

Napolitano, Scott — **Educational Psychology/ Center for Brain, Biology and Behavior/ Nebraska Center for Research on Children, Youth, Families and Schools**

School Psychology Specialization in Concussion/ Mild Traumatic Brain Injury (mTBI)

$1,191,884 . . . . . ED
Maerlender, Arthur . . . . . Center for Brain, Biology and Behavior/ Nebraska Center for Research on Children, Youth, Families and Schools

Nelson, Timothy — **Psychology/ Center for Brain, Biology and Behavior**

*Executive Control and Adolescent Weight Trajectories

$2,443,777 . . . . . NIH-NIDDK
Brock, Becca . . . . Psychology/Center for Brain, Biology and Behavior
Nelson, Jennifer . . . . . Research and Economic Development/ Center for Brain, Biology and Behavior

Role of Executive Control in Adolescent Substance Use and Co-occurring Problems

$1,009,204 . . . . . NIH-NIDA through Boys Town National Research Institute
Espy, Kimberly . . . . . Psychology/ Center for Brain, Biology and Behavior
Nelson, Jennifer . . . . . Psychology/ Center for Brain, Biology and Behavior

Neta, Maital — **Psychology/ Center for Brain, Biology and Behavior**

Functional Brain Networks Mediating Individual Differences in Valence Bias

$1,781,034 . . . . . NIH-NIMH

Nugent, Gwen — **Nebraska Center for Research on Children, Youth, Families and Schools**

*Testing the Efficacy of INSIGHTS for Promoting Positive Learning Environments and Academic Achievement in Nebraska: A Replication Study

$3,299,957 . . . . . ED-IES
Bovaird, James . . . . . Educational Psychology/ Nebraska Center for Research on Children, Youth, Families and Schools
Crockett, Lisa . . . . . Psychology/Nebraska Center for Research on Children, Youth, Families and Schools
Sheridan, Susan . . . . . Educational Psychology/Nebraska Center for Research on Children, Youth, Families and Schools
Wheeler, Lorey . . . . . Nebraska Center for Research on Children, Youth, Families and Schools

Olson, Kristin — **Sociology/Gallup Research Center**

Reducing Error in Computer Survey Data Collection

$3,484,525 . . . . . NSF
Belli, Robert . . . . . Psychology/Gallup Research Center
Smyth, Jolene . . . . . Sociology/Gallup Research Center
Soh, Leen-Kiat . . . . . Computer Science and Engineering

Pannier, Angela — **Biological Systems Engineering**

Using Cell Priming and Telecommunications Modeling to Enhance Gene Delivery for Stem Cell Therapies (DP2)

$2,197,500 . . . . . NIH-NIBIB

Pegg, Mark — **Natural Resources**

Missouri River Sportfish Ecology and Management

$1,324,787 . . . . . Nebraska Game and Parks Commission
Hamel, Martin . . . . . Natural Resources

Pérez, Lance — **Academic Affairs**

WIDER: Adopting Research-Based Instructional Strategies for Enhancing STEM Education

$1,990,279 . . . . . NSF
Arthurs, Leilani . . . . . Earth and Atmospheric Studies
Couch, Brian . . . . . Biological Sciences
Golick, Douglas . . . . . Entomology
Heaton, Ruth . . . . . Teaching, Learning and Teacher Education
Lee, Kevin . . . . . Center for Science, Mathematics and Computer Education/Physics and Astronomy
Spiegel, Amy . . . . . Educational Psychology
Stains, Marilyne . . . . . Chemistry

Pope, Kevin — **Natural Resources**

*Human Dimensions of Nebraska's Fisheries
$1,747,225 ..... DOI-FS through Nebraska Game and Parks Commission
Chizinski, Christopher ..... Natural Resources

Human Dimensions of Nebraska's Fisheries
$2,165,236 ..... Nebraska Game and Parks Commission
Chizinski, Christopher ..... Natural Resources

Rajca, Andrzej — **Chemistry**

New Nitroxide Spin Labels for Distance Measurements in Biological Systems
$1,745,253 ..... NIH-NIGMS
Rajca, Suchada ..... Chemistry

Synthesis of Metal-Free Magnetic Resonance Imaging Contrast Agents
$1,208,299 ..... NIH-NIBIB
Rajca, Suchada ..... Chemistry

Ray, Chittaranjan — **Civil Engineering/Water Center/Robert B. Daugherty Water for Food Institute**

Securing Water for and from Agriculture through Effective Community and Stakeholder Engagement
$1,040,893 ..... USDA-NIFA through Pennsylvania State University
Burbach, Mark ..... Natural Resources/Robert B. Daugherty Water for Food Institute
Fulginiti, Lilyan ..... Agricultural Economics/Robert B. Daugherty Water for Food Institute
Groskopf, Jessica ..... Panhandle Research and Extension Center/Robert B. Daugherty Water for Food Institute
Perrin, Richard ..... Agricultural Economics/Robert B. Daugherty Water for Food Institute
Rudnick, Daran ..... West Central Research and Extension Center/Robert B. Daugherty Water for Food Institute

Reddy, N.R. Jayagopala — **Veterinary Medicine and Biomedical Sciences**

Autoimmunity in the Mediation of Infectious Myocarditis
$1,365,031 ..... NIH-NHLBI
Riethoven, Jean-Jack ..... Biotechnology
Steffen, David ..... Veterinary Medicine and Biomedical Sciences

Rilett, Laurence — **Civil Engineering/Nebraska Transportation Center**

Traffic Calming Elements for Entry Control Facility Threat Delay and Containment
$3,706,933 ..... DoD-Offutt Air Force Base-STRATCOM through National Strategic Research Institute
Faller, Ronald ..... Civil Engineering/Nebraska Transportation Center
Reid, John ..... Mechanical & Materials Engineering/Nebraska Transportation Center

Transportation Infrastructure - Visualizations & ITS Laboratory
$3,171,651 ..... DOT-FHWA through Nebraska Department of Transportation
Faller, Ronald .... Civil Engineering/Midwest Roadside Safety Facility

UTC Tier 1 with University of Texas Pan American
$1,262,880 ..... DOT-FHWA through University of Texas-Pan-American
Khattak, Aemal ..... Civil Engineering

Savaiano, Mackenzie — **Special Education and Communication Disorders**

Mid-Plains Professional Upgrade Partnership - Sensory Disabilities
$1,082,718 ..... ED
Thomas, Anne ..... Special Education and Communication Disorders

Scott, Stephen — **Computer Science and Engineering**

*Operationalizing Cyber Situational Awareness Research: Capability Exploration
$1,525,215 ..... DoD-Offutt Air Force Base-STRATCOM through National Strategic Research Institute
Haugerud, Rick ..... Information Services
Magilton, Elsbeth ..... Law
Variyam, Vinod ..... Computer Science and Engineering

Sellmyer, David — **Physics and Astronomy/Nebraska Center for Materials and Nanoscience**

Nebraska Nanoscale Facility of NNCI
$3,494,096 ..... NSF
Binek, Christian ..... Physics and Astronomy/Nebraska Center for Materials and Nanoscience
Lai, Rebecca ..... Chemistry/Nebraska Center for Materials and Nanoscience
Liou, Sy-Hwang ..... Physics and Astronomy/Nebraska Center for Materials and Nanoscience
Shield, Jeffrey ..... Mechanical & Materials Engineering/Nebraska Center for Materials and Nanoscience

Studies of Artificially Structured Composite Magnets
$1,768,002 ..... DOE

Sheridan, Susan — Educational Psychology/ Nebraska Center for Research on Children, Youth, Families and Schools/ Buffett Early Childhood Institute

Early Learning Contexts in Rural and Urban Nebraska
$4,599,878 ..... ED-IES
Bovaird, James ..... Educational Psychology/ Nebraska Center for Research on Children, Youth, Families and Schools/ Buffett Early Childhood Institute
DeKraai, Mark ..... Public Policy Center/ Nebraska Center for Research on Children, Youth, Families and Schools/ Buffett Early Childhood Institute
Iruka Thompson, Iheoma ..... Buffett Early Childhood Institute/ Nebraska Center for Research on Children, Youth, Families and Schools
Knoche, Lisa ..... Nebraska Center for Research on Children, Youth, Families and Schools/ Buffett Early Childhood Institute

A Randomized Trial of Conjoint Behavioral Consultation (CBC) with Latino Students: A Replication Study
$3,499,987 ..... ED-IES
Bovaird, James ..... Educational Psychology
Wheeler, Lorey ..... Nebraska Center for Research on Children, Youth, Families and Schools

Early Learning Network Lead
$1,999,987 ..... ED
Knoche, Lisa ..... Nebraska Center for Research on Children, Youth, Families and Schools

Smith, Wendy — Mathematics/Center for Science, Mathematics and Computer Education

Nebraska Partnership TEAMS (Teaching to Enhance Achievement in Mathematics and Science)
$1,068,400 ..... ED through Nebraska Department of Education
Arthurs, Leilani ..... Center for Science, Mathematics and Computer Education/ Earth and Atmospheric Sciences
Heaton, Ruth ..... Teaching, Learning and Teacher Education
Homp, Michelle ..... Center for Science, Mathematics and Computer Education
Lai, Yvonne ..... Center for Science, Mathematics and Computer Education/Mathematics
Lewis, Elizabeth ..... Teaching, Learning and Teacher Education
Males, Lorraine ..... Teaching, Learning and Teacher Education
Searls, Mindi ..... Center for Science, Mathematics and Computer Education/ Earth and Atmospheric Sciences
Thomas, Amanda ..... Teaching, Learning and Teacher Education
Thomas, Julie ..... Center for Science, Mathematics and Computer Education/ Teaching, Learning and Teacher Education

Soh, Leen-Kiat — Center for Science, Mathematics and Computer Education/ Computer Science and Engineering

*Adapt, Implement and Research at Nebraska: A Statewide Implementation Study of a Researcher-Practitioner Partnership for K-8 Computer Science Education
$2,000,000 ..... NSF
Nugent, Gwen ..... Nebraska Center for Research on Children, Youth, Families and Schools
Smith, Wendy ..... Center for Science, Mathematics and Computer Education
Trainin, Guy ..... Teaching, Learning and Teacher Education

Speck, Kate — Public Policy Center

*Nebraska Youth Suicide Prevention 2019-2024
$3,610,121 ..... DHHS-SAMHSA
Bulling, Denise ..... Public Policy Center
Dekraai, Mark ..... Public Policy Center

Stains, Clifford — Chemistry

Chemical Approaches for Interrogating Fundamental Biomedical Processes
$1,735,143 ..... NIH-NIGMS

Starace, Anthony — Physics and Astronomy

Imaging and Controlling Ultrafast Dynamics of Atoms, Molecules, and Nanostructures
$2,451,966 ..... NSF-EPSCoR
Batelaan, Herman ..... Physics and Astronomy
Centurion, Martin ..... Physics and Astronomy
Fabrikant, Ilya ..... Physics and Astronomy
Fuchs, Matthias ..... Physics and Astronomy
Gay, Timothy ..... Physics and Astronomy
Lu, Yongfeng ..... Electrical and Computer Engineering
Schubert, Eva ..... Electrical and Computer Engineering
Shadwick, Bradley ..... Physics and Astronomy
Swanson, David ..... Holland Computing Center

Uiterwaal, Cornelis ..... Physics and Astronomy
Umstadter, Donald ..... Physics and Astronomy

Dynamics of Few-Body Atomic Processes
$2,565,804 ..... DOE

Storz, Jay — **Biological Sciences**

RII Track-2 FEC: Using Natural Variation to Educate, Innovate, and Lead (UNVEIL): A Collaborative Research Network to Advance Genome-to-Phenome Connections in the Wild
$1,856,000 ..... NSF through University of Montana
Meiklejohn, Colin ..... Biological Sciences
Montooth, Kristi ..... Biological Sciences

Mutational Pleiotropy, Epistasis, and the Adaptive Evolution of Hemoglobin Function
$1,437,536 ..... NIH-NHLBI

Sutter, Peter — **Electrical and Computer Engineering**

Exploring and Embracing Heterogeneity in Atomically Thin Energy Materials
$1,238,000 ..... DOE
Sutter, Eli ..... Mechanical & Materials Engineering

Svoboda, Mark — **Natural Resources**

Providing Drought Information Services for the Nation: The National Drought Mitigation Center
$2,443,222 ..... DOC-NOAA
Bathke, Deborah ..... Earth and Atmospheric Sciences
Fuchs, Brian ..... Natural Resources
Knutson, Cody ..... Natural Resources
Tadesse, Tsegaye ..... Natural Resources

Development of the MENA Regional Drought Management System
$1,504,240 ..... USAID through International Center for Biosaline Agriculture
Bathke, Deborah ..... Natural Resources
Hayes, Michael ..... Natural Resources
Knutson, Cody ..... Natural Resources
Tadesse, Tsegaye ..... Natural Resources

Swanson, David — **Computer Science and Engineering**

Open Science Grid Consortium
$1,989,038 ..... NSF through University of Wisconsin-Madison

Takacs, James — **Chemistry**

Catalytic Asymmetric Hydroboration: Uncapping the Potential with Two-point Binding Substrates
$1,232,002 ..... NIH-NIGMS

Terry, Benjamin — **Mechanical & Materials Engineering**

En-route Care for Acute Respiratory Distress Syndrome (ARDS) Maturation
$1,259,336 ..... DoD-Offutt Air Force Base-STRATCOM through National Strategic Research Institute

Thomas, Amanda — **Teaching, Learning and Teacher Education/ Nebraska Center for Research on Children, Youth, Families and Schools**

Nebraska STEM: Supporting Elementary Rural Teacher Leadership
$1,499,493 ..... NSF
Forbes, Cory ..... Natural Resources/ Nebraska Center for Research on Children, Youth, Families and Schools
Homp, Michelle ..... Center for Science, Mathematics and Computer Education/ Nebraska Center for Research on Children, Youth, Families and Schools
Nugent, Gwen ..... Nebraska Center for Research on Children, Youth, Families and Schools
Scharmann, Lawrence ..... Teaching, Learning and Teacher Education/ Nebraska Center for Research on Children, Youth, Families and Schools
Smith, Wendy ..... Center for Science, Mathematics and Computer Education/ Nebraska Center for Research on Children, Youth, Families and Schools
Soh, Leen-Kiat ..... Computer Science and Engineering/ Nebraska Center for Research on Children, Youth, Families and Schools
Thomas, Julie ..... Teaching, Learning and Teacher Education/ Nebraska Center for Research on Children, Youth, Families and Schools
Trainin, Guy ..... Teaching, Learning and Teacher Education/ Nebraska Center for Research on Children, Youth, Families and Schools
Wei, Sally ..... College of Engineering/ Nebraska Center for Research on Children, Youth, Families and Schools

Torkelson-Trout, Alexandra — **Special Education and Communication Disorders/ Academy for Child and Family Wellbeing**

A Missing Link to a Better Tomorrow: Developing Health Literacy in Transition-Age Youth with High Incidence Disabilities

$1,499,994 ..... ED
Duppong Hurley, Kristin ..... Special Education and Communication Disorders/ Academy for Child and Family Wellbeing
Lambert, Matthew ..... Special Education and Communication Disorders/ Academy for Child and Family Wellbeing

Umstadter, Donald — **Physics and Astronomy**

*LaserNetUS

$1,000,000 ..... DOE

Relativistic Optics: Interactions of Electrons with Laser Light at Highly Relativistic Intensities

$1,499,867 ..... DoD-AFOSR
Banerjee, Sudeep ..... Physics and Astronomy
Chen, Shouyuan ..... Physics and Astronomy
Fuchs, Matthias ..... Physics and Astronomy
Shadwick, Bradley ..... Physics and Astronomy
Starace, Anthony ..... Physics and Astronomy

Laser Produced Coherent X-Ray Sources

$1,994,997 ..... DOE

Van Etten, James — **Plant Pathology/ Nebraska Center for Virology**

RII Track-2 FEC: G2P in VOM: An Experimental and Analytical Framework for Genome to Phenome Connections in Viruses of Microbes

$1,192,224. ..... NSF through University of Delaware
DeLong, John ..... Biological Sciences/ Nebraska Center for Virology
Dunigan, David. ..... Plant Pathology/ Nebraska Center for Virology

Viesca, Kara — **Teaching, Learning and Teacher Education**

International Consortium for Multilingual Excellence in Education

$2,739,661 ..... ED
Gatti, Lauren ..... Teaching, Learning and Teacher Education
Johnson, Aaron ..... Teaching, Learning and Teacher Education
Kiramba, Lydiah ..... Teaching, Learning and Teacher Education

Walters, Cory — **Agricultural Economics**

Northern Plains Regional Farm Business Management and Benchmarking Partnership

$1,322,060 ..... USDA-NIFA
Banerjee, Simanti ..... Agricultural Economics

West, John — **Nebraska Center for Virology**

KSHV, HIV and the Kaposi's Sarcoma Tumor Niche

$2,876,355 ..... NIH-NCI
Wood, Charles ..... Biological Sciences/Biochemistry/ Nebraska Center for Virology

Whitbeck, Les — **Sociology**

A RCT of a Family-Centered Ojibwe Substance Abuse Prevention

$3,560,784 ..... NIH-NIDA
Crawford, Devan ..... Sociology

Wiebe, Matthew — **Veterinary Medicine and Biomedical Sciences**

Mechanism of the Antiviral Activity of BAF against Poxvirus and HSV-1 Infection

$1,838,387 ..... NIH-NIAID

Williams, Robert — **Mechanical & Materials Engineering**

Nebraska Industrial Assessment Center (NIAC)

$1,439,589 ..... DOE
Dvorak, Bruce ..... Civil Engineering
Gogos, George ..... Mechanical & Materials Engineering

Wood, Charles — **Biological Sciences/Biochemistry/ Nebraska Center for Virology**

*Biomarkers for Dysbiosis-Related HIV-Associated Cognitive Disorders among Persons Who Inject Drugs in Puerto Rico

$3,029,162 ..... NIH-NIDA
Chiou, Kathy ..... Psychology/Nebraska Center for Virology
Dombrowski, Kirk ..... Sociology/Nebraska Center for Virology
Fernando, Samodha ...Animal Science/Nebraska Center for Virology
Khan, Bilal ..... Sociology/Nebraska Center for Virology
West, John ..... Biochemistry/Nebraska Center for Virology

*Models of KHSV Transmission and Its Inhibition

$2,192,835 ..... NIH-NCI
West, John ..... Biochemistry/Nebraska Center for Virology

Zambia AIDS Malignancies Diagnosis and Pathogenesis Program

$3,842,954 ..... NIH-NCI
Angeletti, Peter.....Biological Sciences/ Nebraska Center for Virology
West, John.....Nebraska Center for Virology

The Impact of Cannabis on Inflammation and HIV-1 Reservoirs in Zambia

$3,745,393 ..... NIH-NIDA
Li, Qingsheng .....Biological Sciences/ Nebraska Center for Virology
West, John.....Nebraska Center for Virology

AIDS Malignancies Training and Research International Program (AMTRIP)

$1,482,515 ..... NIH-FIC

Cancer Research International Training and Intervention Consortium (CRITIC)

$3,973,528 ..... NIH-NCI
Angeletti, Peter .....Biological Sciences
Minhas, Veenu .....Nebraska Center for Virology
West, John .....Nebraska Center for Virology

Programs in HIV & AIDS Assoc Diseases/Malignancies

$2,713,284 ..... NIH-FIC

Yamamoto, Catherine — **Student Affairs**

Student Support Services Program

$2,647,468 .....ED

Yu, Bin — **Biological Sciences/ Center for Plant Science Innovation**

*Understand the Function of the MOS4-Associated Complex in MicroRNA Biogenesis

$1,570,405 .....NIH-NIGMS

Zempleni, Janos — **Nutrition and Health Sciences/ Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules**

Molecular Signatures of New Bioactive Compounds in Humans: Cows Milk MicroRNAs

$1,785,715 ..... USDA-NIFA
Adamec, Jiri ..... Biochemistry/ Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules
Cui, Juan .....Computer Science and Engineering/ Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules

Zeng, Xiao — **Chemistry**

RII Track-2 FEC: Low-Cost, Efficient Next-Generation Solar Cells for the Coming Clean Energy Revolution

$1,288,002 ..... NSF through Brown University
Hong, Xia ..... Physics and Astronomy

Awards of $250,000 to $999,999

Active awards, July 1, 2018–June 30, 2019

* Indicates new in 2018–2019

Abadie, Roberto — **Sociology**

*Assessing the Effects of Hurricane Maria on Opioid Agonist Treatment Access among PWID in Rural Puerto Rico

$412,763 ..... NIH-NIDA
Dombrowski, Kirk ..... Sociology
Habecker, Patrick ..... Sociology

Adamowicz, Michael — **College of Agricultural Sciences and Natural Resources**

The Human Virome as Trace Evidence in Forensic Investigation

$698,382 ..... DOJ-NIJ
Clarke, Jennifer ..... Food Science and Technology/Statistics
Fernando, Samodha ..... Animal Science
Herr, Joshua ..... Plant Pathology

Adenwalla, Shireen — **Physics and Astronomy/ Nebraska Center for Materials and Nanoscience**

Strain Driven Dynamics of Phase Transitions in Oxide Antiferromagnets

$550,000 ..... NSF
Binek, Christian ..... Physics and Astronomy
Hong, Xia ..... Physics and Astronomy

Alexander, Dennis — **Electrical and Computer Engineering**

Quarter Scale Critical Heat Exchanger for International Space Station

$350,000 ..... NASA-Johnson Space Center
Zuhlke, Craig ..... Electrical and Computer Engineering

Instrumentation for Understanding and Controlling Surface Chemistry during Femtosecond Laser Surface Processing

$961,830 ..... DoD-ONR-DURIP
Ianno, Natale ..... Electrical and Computer Engineering
Zuhlke, Craig ..... Electrical and Computer Engineering

Alfano, James — **Plant Pathology/ Center for Plant Science Innovation**

EAGER: The Involvement of Blue Light in Plant Immunity

$264,899 ..... NSF

Allen, Craig — **Natural Resources**

Global Change, Vulnerability and Resilience: Management Options for an Uncertain Future

$771,345 ..... DoD-SERDP
Twidwell, Dirac Jr. ..... Agronomy and Horticulture

Auchtung, Jennifer — **Food Science and Technology**

*Using Complimentary in Vitro and in Vivo Models of the Human Microbiome to Study Antibiotic-Mediated Disruption

$387,955 ..... DHHS-CDC

Avalos, George — **Mathematics**

Analysis and Control Theory for Moving Boundary and Nonlinear Phenomena in Interactive Partial Differential Equations

$328,901 ..... NSF
Guven Geredeli, Pelin ..... Mathematics

Avramov, Luchezar — **Mathematics**

Cohomology over Commutative Rings: Structure and Applications

$458,919 ..... NSF

Awada, Tala — **Natural Resources**

Carbon Flux from Great Plains Agroecosystems Associated with the ARS LTAR Network

$300,000 ..... USDA-ARS
Erickson, Galen ..... Animal Science
Suyker, Andy ..... Natural Resources

Baenziger, P. Stephen — **Agronomy and Horticulture**

Developing the Tools and Germplasm for Hybrid Wheat

$975,000 ..... USDA-NIFA

Balkir, Sina — **Electrical and Computer Engineering**

*Low-Power Signal-Processing Electronics for Unattended Radiation Monitoring Sensors

$557,135 ..... DoD-DTRA
Bauer, Mark ..... Electrical and Computer Engineering
Hoffman, Michael ..... Electrical and Computer Engineering

Low-profile PMT Scintillator Read-out System

$987,191 ..... Do D-DTRA through Kansas State University
Bauer, Mark ..... Electrical and Computer Engineering
Hoffman, Michael ..... Electrical and Computer Engineering

Banerjee, Simanti — **Agricultural Economics**

The Impacts of Conservation Auction Design on Auction Performance and Community Welfare: Evidence from Lab and Artefactual Experiments

$498,641 ..... USDA-NIFA

Barker, Bradley — **4-H Youth Development**

EAGER: MAKER: Nebraska Innovative Maker Co-Laboratory (NiMC)

$358,835 ..... NSF
Farritor, Shane ..... Mechanical & Materials Engineering
Keshwani, Jenny ..... Biological Systems Engineering

Nebraska Wearable Technologies

$984,189 ..... NSF
Keshwani, Jennifer ..... Biological Systems Engineering
Krehbiel, Michelle ..... 4-H Youth Development
Nelson, Carl ..... Mechanical & Materials Engineering
Nugent Gwen ..... Nebraska Center for Research on Children, Youth, Families and Schools
Weiss, Wendy ..... Textiles, Merchandising and Fashion Design

Barletta, Raul — **Veterinary Medicine and Biomedical Sciences**

Genome Wide Analysis of *M. Paratuberculosis* Pathogenesis

$499,981 ..... USDA-NIFA

Bartelt-Hunt, Shannon — **Civil Engineering**

*Influence of Agrochemical Mixtures on Treatment Wetland Ecosystems Services

$499,999 ..... USDA-NIFA
Messer, Tiffany ..... Biological Systems Engineering
Snow, Daniel ..... Nebraska Water Center

REU Site: Sustainability of Horizontal Civil Networks in Rural Areas

$352,698 ..... NSF
Jones, Elizabeth ..... Nebraska Transportation Center
Kim, Yong Rak ..... Civil Engineering
Li, Xu ..... Civil Engineering
Li, Yusong ..... Civil Engineering
Linzell, Daniel ..... Civil Engineering
Steelman, Joshua ..... Nebraska Transportation Center

WSC Category 1: Influence of Climate and Agricultural Clustering on Groundwater Contamination by Trace Organics

$599,663 ..... USDA-NIFA
Gates, John ..... Earth and Atmospheric Sciences
Li, Xu ..... Civil Engineering
Li, Yusong ..... Civil Engineering
Rosenbaum, David ..... Economics
Snow, Daniel ..... Water Center
Tang, Zhenghong ..... Community and Regional Planning Program
Thompson, Eric ..... Bureau of Business Research

Bashford, Gregory — **Biological Systems Engineering**

REU Site: Undergraduate Research Opportunities in Biomedical Devices at the University of Nebraska–Lincoln

$364,006 ..... NSF
Nelson, Carl ..... Mechanical & Materials Engineering

Neurological Consequences of Emboli Burden during Cardiopulmonary Bypass

$278,242 ..... Gerber Foundation

Batelaan, Herman — **Physics and Astronomy**

Coherent Electron Control

$475,161 ..... NSF

Becker, Donald — **Biochemistry/ Nebraska Center for Redox Biology/ Center for Plant Science Innovation**

REU Site: Training in Redox Biology

$298,186 ..... NSF
Adamec, Jiri ..... Biochemistry/Nebraska Center for Redox Biology/ Center for Plant Science Innovation
Alfano, Jim ..... Plant Pathology/Nebraska Center for Redox Biology/ Center for Plant Science Innovation
Du, Liangcheng ..... Chemistry/Nebraska Center for Redox Biology/ Center for Plant Science Innovation
Franco Cruz, Rodrigo ..... Veterinary Medicine and Biomedical Sciences/ Nebraska Center for Redox Biology/ Center for Plant Science Innovation
Khalimonchuk, Oleh ..... Biochemistry/ Nebraska Center for Redox Biology/ Center for Plant Science Innovation
Lee, Jaekwon ..... Biochemistry/Nebraska Center for Redox Biology/ Center for Plant Science Innovation
Ro, Seung-Hyun ..... Biochemistry/Nebraska Center for Redox Biology/ Center for Plant Science Innovation
Stone, Julie ..... Biochemistry/Nebraska Center for Redox Biology/ Center for Plant Science Innovation

Wilson, Mark. . . . . Biochemistry/Nebraska Center for Redox Biology/
Center for Plant Science Innovation
Zhang, Limei . . . . . Biochemistry/
Center for Plant Science Innovation/
Nebraska Center for Redox Biology/

Coordination of Functions by Proline Metabolic Proteins
$556,436 . . . . . NIH-NIGMS through University of Missouri-Columbia

Belashchenko, Kirill — **Physics and Astronomy**

First-Principles Studies of Relativistic
Spin Interactions and Torques
$258,646 . . . . . NSF

Belli, Robert — **Psychology/Gallup Research Center**

Central Plains Census Research Data Center
$300,000 . . . . . NSF
Anderson, John . . . . . Economics
Thompson, Eric . . . . . Bureau of Business Research

Benson, John — **Natural Resources**

Reproductive Success, Survival, and Cause-specific
Mortality of Bighorn Sheep in Nebraska
$280,740 . . . . . Nebraska Game and Parks Commission

Berkowitz, David — **Chemistry**

*Medical Countermeasure Drug Discovery and Development
$321,028 . . . . . DoD-Offutt Air Force Base-STRATCOM through
National Strategic Research Institute
Dussault, Patrick . . . . . Chemistry
Helikar, Tomas . . . . . Biochemistry
Powers, Robert . . . . . Chemistry

Medical Countermeasure Drug Discovery and Development
$904,977 . . . . . DoD-Offutt Air Force Base-STRATCOM through
National Strategic Research Institute
Helikar, Tomas . . . . . Biochemistry
Powers, Robert . . . . . Chemistry

New Approaches to Catalyst Screening and Development
$470,000 . . . . . NSF

Bianchini Huebner, Andreia — **Food Science and Technology**

Alliance for Food Security through Reduction of
Postharvest Loss and Food Waste
$930,007 . . . . . USAID through Kansas State University

Bielenberg, Robert — **Midwest Roadside Safety Facility**

*Development of an Optimized MASH TL-4 Kansas Corral Rail
(Kansas, Iowa, South Dakota and Virginia)
$401,400 . . . . . DOT-KS DOT through
Nebraska Department of Transportation
Faller, Ronald . . . . . Midwest Roadside Safety Facility
Holloway, James . . . . . Midwest Roadside Safety Facility
Lechtenberg, Karla . . . . . Midwest Roadside Safety Facility
Rosenbaugh, Scott . . . . . Midwest Roadside Safety Facility

Billesbach, David — **Biological Systems Engineering**

SGP-Carbon Project
$449,800 . . . . . University of California-Berkeley National Lab

Binek, Christian — **Physics and Astronomy/Nebraska Center for Materials and Nanoscience**

Magnetoelectrics and Spinorbitronics in
Topological Heterostructures and Superlattices
$516,500 . . . . . DoD-ONR through
University of California, Los Angeles

Black, Paul — **Biochemistry**

Waste to Oil and High Value Bioproducts
$734,608 . . . . . Nebraska Department of Economic Development
through Vestal W2O
Allen, James . . . . . Biochemistry

Blanco, Humberto — **Agronomy and Horticulture**

Enhancing Soil Ecosystem Services with Cover Crops
$252,471 . . . . . Nebraska Environmental Trust
Ferguson, Richard . . . . . Agronomy and Horticulture
Jasa, Paul . . . . . Biological Systems Engineering

Assessing Innovative Strategies to Maximize Cover Crop Yields
for Biofuel across Precipitation Gradient
$500,000 . . . . . USDA-NIFA
Creech, Cody . . . . . Panhandle Research and Extension Center
Elmore, Roger . . . . . Agronomy and Horticulture
Francis, Charles . . . . . Agronomy and Horticulture
Koehler-Cole, Katja . . . . . Agronomy and Horticulture
Parsons, Jay . . . . . Agricultural Economics
Ruis, Sabrina . . . . . Agronomy and Horticulture
Shaver, Tim . . . . . West Central Research and Extension Center
Yang, Haishun . . . . . Agronomy and Horticulture

Blum, Paul — **Biological Sciences**

Chromatin Modification in Archaea and Its Role in Gene Expression

$379,675 ..... NSF
Van Cott, Kevin ..... Chemical and Biomolecular Engineering

REU Site: Integrated Development of Bioenergy Systems

$416,464 ..... NSF
Cerutti, Heriberto ..... Biological Sciences/ Center for Plant Science Innovation

Bobaru, Florin — **Mechanical & Materials Engineering**

Stress Corrosion Cracking: The Importance of Damage Evolution in the Layer Affected by Corrosion

$596,188 ..... DoD-ONR
Tan, Li ..... Mechanical & Materials Engineering

Bovaird, James — **Educational Psychology/Nebraska Center for Research on Children, Youth, Families and Schools**

Efficacy of the START-Play Program for Infants with Neuromotor Disorders

$475,408 ..... ED-IES through Duquesne University
Sheridan, Susan ..... Educational Psychology/Nebraska Center for Research on Children, Youth, Families and Schools

Brewer, Gary — **Entomology**

A Multi-tactic Push-Pull Strategy for Controlling Stable Flies on Pasture Cattle in Nebraska and Florida

$325,000. ..... USDA-NIFA
Boxler, David ..... West Central Research and Extension Center
Hanford, Kathryn ..... Statistics
Stockton, Matt ..... West Central Research and Extension Center

Brown-Brandl, Tami — **Biological Systems Engineering**

*Assessing the Effects of Farrowing Crate Design and Mothering Phenotype on Pre-Weaning Piglet Survival

$439,110 ..... National Pork Board
Keshwani, Deepak ..... Biological Systems Engineering
Shi, Yeyin ..... Biological Systems Engineering
Stowell, Rick ..... Biological Systems Engineering

Buchholz, Wallace — **Biological Process Development Facility**

Manufacture of Recombinant Vaccine for Phase Clinical Trial and Toxicity Testing

$894,832 ..... National Strategic Research Institute
Johnson, Scott ..... Biological Process Development Facility

Bulling, Denise — **Public Policy Center**

Drought Planning Using Community Threat and Hazard Identification and Risk Assessment

$284,588 ..... DOC-NOAA
Abdel-Monem, Tarik ..... Public Policy Center
Bathke, Deborah ..... Natural Resources
Bernadt, Tonya ..... Natural Resources
Fuchs, Brian ..... Natural Resources
Pytlik Zillig, Lisa ..... Public Policy Center
Shank, Nancy ..... Public Policy Center
Stiles, Crystal ..... Natural Resources
Wall, Nicole ..... Natural Resources

Developing Nebraska's Homeland Security Planning Capacity

$250,000 ..... DHS through Nebraska Military Department-NEMA
DeKraai, Mark ..... Psychology/Public Policy Center
Speck, Kathryn ..... Public Policy Center

Cahoon, Edgar — **Biochemistry/ Center for Plant Science Innovation**

*Dissecting the Sphingolipid Metabolic and Regulatory Network

$750,000 ..... NSF
Markham, Jonathan ..... Biochemistry/ Center for Plant Science Innovation
Saha, Rajib ..... Chemical and Biomolecular Engineering/ Center for Plant Science Innovation

Overcoming Metabolic Bottlenecks for Enhanced Vitamin E Production in Crop Plants

$490,000 ..... USDA-NIFA

Sustainable Biofuel from the Great Plains to the Semi-Arid West: Improved Germplasm for Camelina Oilseed

$373,976 ..... DOE through Colorado State University

Carroll, John — **Natural Resources**

Wildlife Management and Human Dimensions

$255,000 ..... DOI-FWS through Nebraska Game and Parks Commission

Centurion, Martin — **Physics and Astronomy**

OP: Diffractive Imaging of Complex Isolated Molecules

$375,170 ..... NSF

Cerutti, Heriberto — **Biological Sciences/ Center for Plant Science Innovation**

Developing Genetic and Genomics Tools for *Tetraselmis* sp.
$689,033 . . . . . Gordon and Betty Moore Foundation
Clemente, Thomas . . . . . Agronomy and Horticulture/ Center for Plant Science Innovation

Mechanisms of Small RNA-Mediated Translation Repression in *Chlamydomonas*
$560,000 . . . . . NSF

Cheung, Chin Li (Barry) — **Chemistry**

Defect Chemistry of Metal Oxides for Catalytic Reactive Oxygen Species Generation
$406,283 . . . . . NSF

Chizinski, Christopher — **Natural Resources**

Comprehensive Evaluation of the Nebraska Outdoor Enthusiast
$288,371 . . . . . DOI-FWS through Nebraska Game and Parks Commission
Fontaine, Joseph . . . . . Natural Resources
Pope, Kevin . . . . . Natural Resources

Choueiry, Berthe — **Computer Science and Engineering**

RI: Small: Harnessing the Power of Constraint Propagation by Controlling Consistency Levels and Synthesizing Constraints
$486,000 . . . . . NSF

Christensen, Alan — **Biological Sciences**

Novel Mechanisms of Plant Mitochondrial DNA Repair
$660,788 . . . . . NSF

Chung, Soonkyu — **Nutrition and Health Sciences/ Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules**

Epigenetic Regulation of Obesity and Metainflammation by Red Raspberry Ellagic Acid and its Microbiota-derived Metabolites, the Urolithins
$469,949 . . . . . USDA-NIFA
Ramer-Tait, Amanda . . . . . Food Science and Technology/ Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules

Ciftci, Ozan — **Food Science and Technology**

Development of an Integrated Green Process to Obtain a High-value, Stable and Bioavailable Lycopene Product from Tomato Processing Industry Waste
$489,781 . . . . . USDA-NIFA
Demirel, Yasar . . . . . Chemical and Biomolecular Engineering

Ciobanu, Daniel — **Animal Science**

Investigation of Host Genetic Role in PCV2 and PRRSV Susceptibility
$459,200 . . . . . USDA-NIFA
Kachman, Stephen . . . . . Statistics
Vu, Hiep . . . . . Nebraska Center for Virology

Clemente, Thomas — **Agronomy and Horticulture/ Center for Plant Science Innovation/ Center for Biotechnology**

EAGER: Non-integrative Transient Delivery of Reagents into Plant Cells via the Type IV Secretion System of *A. tumefaciens*
$299,006 . . . . . NSF

Novel Technologies to Solve the Water Use Problem of High Yielding C4 Bioenergy and Bioproduct Feedstocks
$477,321 . . . . . DOE through University of Illinois at Urbana-Champaign

A Resource for Functional Genomics to Support Soybean Genetics and Breeding
$835,378 . . . . . NSF through University of Georgia

Cornelius, Christopher — **Chemical and Biomolecular Engineering**

Nanomanufacturing of Multicomponent Inorganic Functional Coatings and Fibers Using Sol-Gel Processing
$297,543 . . . . . NSF

Couch, Brian — **Biological Sciences/ Nebraska Center for Virology**

Mapping Change in Higher Education Social Networks and STEM Reforms
$524,243 . . . . . NSF

Cultivating Active Learners by Enabling Instructors to Monitor and Enhance Student Buy-in and Utilization of Research-based Instructional Strategies
$299,920 . . . . . NSF
Brassil, Chad . . . . . Biological Sciences

Impact of the Summer Institution on Faculty Teaching and Student Achievement
$393,068 . . . . . NSF through University of Colorado

Nebraska Research Network in Functional Genomics
$548,821 . . . . . NIH-NIGMS through UNMC
Wood, Charles . . . . . Biological Sciences/Biochemistry/ Nebraska Center for Virology

Cress Nipper, Cynthia — **Special Education and Communication Disorders**

STTR: Infant Screening of Communication Risk: The CISS
$531,270 . . . . . NIH-NIDCD through Brookes Publishing Co., Inc.

Cui, Bai — **Mechanical & Materials Engineering**

Understanding the Mechanisms of the Pulsed Electric Current Process for Joining Oxide-Dispersion-Strengthened Alloys
$307,825 . . . . . NSF
Nastasi, Michael . . . . Nebraska Center for Energy Sciences Research
Zhou, Qin. . . . . Mechanical & Materials Engineering

Mechanisms of Toughening Structural Ceramics by Thermal Engineered Laser Shock Peening
$348,336 . . . . . NSF
Lu, Yongfeng . . . . . Electrical and Computer Engineering
Nastasi, Michael . . . . Nebraska Center for Energy Sciences Research

Dauer, Jenny — **Natural Resources**

Making Decisions about Socioscientific Issues in Multidisciplinary Postsecondary Learning Environments
$303,419 . . . . . NSF

DeLong, John — **Biological Sciences**

Understanding the Consequences of Body Size Evolution in Ecological Communities
$450,000 . . . . . James S. McDonnell Foundation

Detweiler, Carrick — **Computer Science and Engineering**

*Fixed Wing VTOL Sensor Emplacement
$740,798 . . . . . DoD-Offutt Air Force Base-STRATCOM through National Strategic Research Institute
Bradley, Justin . . . . . Computer Science and Engineering
Duncan, Brittany . . . . . Computer Science and Engineering

COTS Autonomous Tracking and Indicating Prototype
$666,497 . . . . . DoD-Offutt Air Force Base-STRATCOM through National Strategic Research Institute
Bradley, Justin. . . . . Computer Science and Engineering
Duncan, Brittany . . . . . Computer Science and Engineering

Detection of Nuclear Threats Using Deployable Sensors
$469,293 . . . . . DoD-Offutt Air Force Base-STRATCOM through National Strategic Research Institute
Bradley, Justin. . . . . Computer Science and Engineering
Duncan, Brittany . . . . . Computer Science and Engineering

At the Water's Edge: Installation and Optimization of Robotic Sensing Systems
$949,716 . . . . . USDA-NIFA
Bradley, Justin . . . . . Computer Science and Engineering

DiLillo, David — **Psychology**

Intervention to Promote Pro-social Bystander Behaviors
$402,117 . . . . . NIH-NICHD
Brock, Becca . . . . . Psychology
Gervais, Sarah . . . . . Psychology

Dodds, Eric — **Chemistry**

Gas-Phase Structural Analysis of Metal Cationized Carbohydrates
$360,000 . . . . . NSF

Dowben, Peter — **Physics and Astronomy/ Nebraska Center for Materials and Nanoscience**

Controlling Structural, Electronic, and Energy Flow Dynamics of Catalytic Processes through Tailored Nanostructures
$340,001 . . . . . University of Central Florida

Spin and Dipole Ordering at Molecular Film Interfaces
$442,944 . . . . . NSF

Doped Boron Carbide Polymers: Fundamental Studies of a Novel Class of Materials for Enhanced Radiation Detection
$363,250 . . . . . DoD-DTRA through University of North Texas

Duncan, Brittany — **Computer Science and Engineering**

REU Site: Undergraduate Research Opportunities in Unmanned Systems Foundations and Applications
$360,649 . . . . . NSF
Bradley, Justin . . . . . Computer Science and Engineering
Detweiler, Carrick . . . . . Computer Science and Engineering

Duncan, Daniel — **Nebraska Innovation Campus**

Biotech Connector
$750,000 . . . . . DOC-ED

Duppong Hurley, Kristin — **Special Education and Communication Disorders/ Academy on Child and Family Wellbeing**

*Parental Involvement in Education: Comparing Academic Outcomes for High School Students in the General Population and those at Risk of Emotional and Behavioral Issues
$599,680 . . . . . ED-IES
Huscroft-D'Angelo, Jacqueline . . . . . Special Education and Communication Disorders/ Academy on Child and Family Wellbeing
Lambert, Matthew . . . . . Special Education and Communication Disorders/ Academy on Child and Family Wellbeing
Torkelson-Trout, Alexandra . . . . . Special Education and Communication Disorders/ Academy on Child and Family Wellbeing

Randomized Clinical Trial of the Boys Town In-Home Program
$803,256 . . . . . Father Flanagan's Boys' Home

Dussault, Patrick — **Chemistry**

A New Paradigm for Ether Synthesis
$390,000 . . . . . NSF

Dvorak, Bruce — **Civil Engineering**

Water Innovation Network for Sustainable Small Systems (WINSSS)
$338,160 . . . . . EPA through University of Massachusetts-Amherst
Lai, Rebecca . . . . . Chemistry
Ray, Chittaranjan . . . . . Civil Engineering

Dzenis, Yuris — **Mechanical & Materials Engineering**

Bulk Nanostructured Materials for Navy Applications
$702,271 . . . . . DoD-ONR

Biomimetic Nanostructured Materials Based on Synthetic Spider Silk
$300,000 . . . . . NSF

GOALI: Nanomanufacturing of Ultrahigh-Performance Continuous Carbon Nanofibers and Assemblies
$299,947 . . . . . NSF
Papkov, Dimitry . . . . . Mechanical & Materials Engineering

Elkins, Lynne — **Earth and Atmospheric Sciences**

Testing Extrusion Tectonics, Rifting, and Lithosphere-Asthenosphere Coupling Models for the Central Highlands Diffuse Igneous Province, Vietnam
$413,437 . . . . . NSF
Burberry, Cara . . . . . Earth and Atmospheric Sciences

Assessing Segment-scale Compositional Control over Slow-spreading Ridge Morphology
$259,150 . . . . . NSF

Erickson, Galen — **Animal Science**

Evaluation of Algal Biomass as Potential Cattle Feed
$284,091 . . . . . Evonik Industries
Brodersen, Bruce . . . . . Veterinary Medicine and Biomedical Sciences
Loy, J. Dustin . . . . . Veterinary Medicine and Biomedical Sciences
Watson, Andrea . . . . . Animal Science

Erixson, John — **Nebraska State Forest Service**

Genomic Tools, Genetic Resources, and Outreach to Expand Commercial U.S. Hazelnut Production

$685,869 ..... USDA-NIFA through Oregon State University
Clare, Aaron ..... Nebraska State Forest Service
Josiah, Scott ..... Nebraska State Forest Service

Community Adjacent Fuels Award

$572,654 ..... USDA-FS

Protecting, Rehabilitating and Restoring Nebraska's Pine Forest Ecosystems

$989,667 ..... Nebraska Environmental Trust
Duplissis, John ..... Nebraska State Forest Service

Hazardous Mitigation Treatments on Non-Federal Lands

$431,970 ..... USDA-FS

Conservation and Stewardship Education for Nebraska Educators and Youth

$295,781 ..... USDA-FS

Eskridge, Kent — **Statistics**

GAANN Fellowship Program for Statistics

$887,202 ..... ED

Fabrikant, Ilya — **Physics and Astronomy**

Inelastic Electron Collisions with Molecules and Clusters

$269,465 ..... NSF

Faller, Ronald — **Midwest Roadside Safety Facility**

*Crash Testing of Various Bridge Guardrails and Transitions

$799,563 ..... DOT-FHWA through Hawaii Department of Transportation
Bielenberg, Robert ..... Midwest Roadside Safety Facility
Holloway, James ..... Midwest Roadside Safety Facility
Lechtenberg, Karla ..... Midwest Roadside Safety Facility
Ranjha, Sagheer ..... Midwest Roadside Safety Facility
Rasmussen, Jennifer ..... Midwest Roadside Safety Facility
Reid, John ..... Mechanical & Materials Engineering
Rosenbaugh, Scott ..... Midwest Roadside Safety Facility
Song, Chung ..... Civil Engineering
Steelman, Joshua ..... Civil Engineering
Stolle, Cody ..... Midwest Roadside Safety Facility

*MnDOT Barriers 157 and 158 MASH 2016 Testing, Level 3 and Level 4 Evaluations

$560,286 ..... DOT-MN DOT through Nebraska Department of Transportation
Bielenberg, Robert ..... Midwest Roadside Safety Facility
Holloway, James ..... Midwest Roadside Safety Facility
Rasmussen, Jennifer ..... Midwest Roadside Safety Facility
Rosenbaugh, Scott ..... Midwest Roadside Safety Facility
Steelman, Joshua ..... Civil Engineering

*Crash Testing of a Precast Concrete Barrier

$414,128 ..... Iowa Department of Transportation
Bielenberg, Robert ..... Midwest Roadside Safety Facility
Rasmussen, Jennifer ..... Midwest Roadside Safety Facility
Rosenbaugh, Scott ..... Midwest Roadside Safety Facility

MASH TL-4 Steel-tube Bridge Rail and Guardrail Transition

$926,851 ..... DOT-IL DOT/OH DOT through Nebraska Department of Transportation
Bielenberg, Robert ..... Midwest Roadside Safety Facility
Rasmussen, Jennifer ..... Midwest Roadside Safety Facility
Rosenbaugh, Scott ..... Midwest Roadside Safety Facility

Test Level 3 Dynamic Testing and Evaluation of MnDOT's Noise Wall System under AASHTO MASH 2016

$305,115 ..... DOT-MN DOT through Nebraska Department of Transportation
Holloway, James ..... Midwest Roadside Safety Facility
Lechtenberg, Karla ..... Midwest Roadside Safety Facility
Rasmussen, Jennifer ..... Midwest Roadside Safety Facility
Rosenbaugh, Scott ..... Midwest Roadside Safety Facility

Dynamic Testing and Evaluation of a New York DOT Prototype Box Beam Guardrail End Terminal System under AASHTO MASH 2016 TL-3 Guidelines

$265,250 ..... New York State Department of Transportation through Nebraska Department of Transportation
Lechtenberg, Karla ..... Midwest Roadside Safety Facility
Rasmussen, Jennifer ..... Midwest Roadside Safety Facility
Reid, John ..... Mechanical & Materials Engineering

Evaluation of New Jersey TCB Performance under MASH TL-3

$702,369 ..... DOT-FHWA through Nebraska Department of Transportation
Bielenberg, Robert ..... Midwest Roadside Safety Facility
Lechtenberg, Karla ..... Midwest Roadside Safety Facility
Reid, John ..... Mechanical & Materials Engineering
Rosenbaum, Scott ..... Midwest Roadside Safety Facility

Iowa DOT Combination Bridge Separation Barrier with Bicycle Railing
$254,445 ..... DOT-FHWA through Nebraska Department of Transportation
Bielenberg, Robert ..... Midwest Roadside Safety Facility
Reid, John ..... Mechanical & Materials Engineering
Rosenbaugh, Scott ..... Midwest Roadside Safety Facility

Phase II Conceptual Development of an Impact Attenuation System for Intersecting Roadways
$256,184 ..... DOT-FHWA through Nebraska Department of Transportation
Bielenberg, Robert ..... Midwest Roadside Safety Facility
Reid, John ..... Mechanical & Materials Engineering

Fernandez-Ballester, Lucia — Mechanical & Materials Engineering

Nucleation Control of Conjugated Polymers through Melt-crystallization and Self-seeding
$345,000 ..... NSF

Fernando, Samodha — Animal Science

Investigating Mobile Genetic Elements and Resistance Gene Reservoirs towards Understanding the Emergence and Ecology of Antimicrobial Resistance in Beef Cattle Production Systems
$830,751 ..... USDA-NIFA
Bartelt-Hunt, Shannon ..... Civil Engineering
Loy, Dustin ..... Veterinary Medicine and Biomedical Sciences
Messer, Tiffany ..... Biological Systems Engineering
Morota, Gota ..... Animal Science
Paz Manzano, Henry ..... Animal Science
Schmidt, Amy ..... Animal Science/Biological Systems Engineering
Snow, Daniel ..... Water Center
Stowell, Rick ..... Biological Systems Engineering

Moving Beyond Rumen Microbiota Composition to Identify Interactions between Host Genotype and Rumen Function towards Identifying Genetic Markers and Microbial Functions that Influence Feed Efficiency
$500,000 ..... USDA-NIFA
Morota, Gota ..... Animal Science
Paz Manzano, Henry ..... Animal Science
Spangler, Matthew ..... Animal Science

Improving Air Quality by Reducing Methane Emissions from Cattle
$348,298 ..... Nebraska Environmental Trust
Erickson, Galen ..... Animal Science
Kononoff, Paul ..... Animal Science

Fielding, Christopher — Earth and Atmospheric Sciences

ELT Collaborative Research: Causes and Effects of the Permian-Triassic Biotic Crisis Inferred from Continental Margin Sections and Modeling
$400,157 ..... NSF
Frank, Tracy ..... Earth and Atmospheric Sciences

Fontaine, Joseph — Natural Resources

Climatic Constraints on Bobwhite Quail Populations along Their Northern Extent
$424,913 ..... DOI-FWS through Nebraska Game and Parks Commission
Bachman, Gwendolyn ..... Biological Sciences

Forbes, Cory — Natural Resources/ Robert B. Daugherty Water for Food Institute

IUSE: Fostering Undergraduate Students' Disciplinary Learning and Water Literacy
$299,018 ..... NSF
Brozovic, Nicholas ..... Agricultural Economics/ Robert B. Daugherty Water for Food Institute
Franz, Trenton ..... Natural Resources/ Robert B. Daugherty Water for Food Institute

Franzen-Castle, Lisa — Nutrition and Health Sciences

iCook: A 4-H Program to Promote Culinary Skills and Family Meals for Obesity Prevention
$332,321 ..... USDA-NIFA through University of Maine
Krehbiel, Michelle ..... Extension

Voices for Food
$618,314 ..... USDA-NIFA through South Dakota State University
Kroupa, Michelle ..... Northeast Research and Extension Center
Sale, Brenda ..... Northeast Research and Extension Center

Fritz, Sherilyn — Earth and Atmospheric Sciences/ Biological Sciences

FESD Type 1: The Dynamics of Mountains, Landscapes, and Climate in the Distribution and Generation of Biodiversity of the Amazon/Andean Forest
$378,847 ..... NSF through Duke University

Fuchs, Brian — Natural Resources

Drought Information Services and Research for Agriculture across the United States
$925,889 ..... USDA-OCE
Svoboda, Mark ..... Natural Resources

Fuchs, Matthias — **Physics and Astronomy**

Phase-Space Investigation of Laser-driven Weakly Relativistic Electron Beams

$420,000 . . . . . NSF
Centurion, Martin . . . . . Physics and Astronomy
Shadwick, Bradley . . . . . Physics and Astronomy

Nonlinear X-Ray Optics

$594,760 . . . . . DOE

Gamon, John — **Natural Resources**

Dimensions NASA: Linking Remotely Sensed Optical Diversity to Genetic, Phylogenetic and Functional Diversity to Predict Ecosystem Processes

$716,893 . . . . . NSF

Evaluating Growing Season Length and Productivity across the ABoVE Domain Using Novel Satellite Indices and a Ground Sensor

$665,893 . . . . . NASA
Billesbach, David . . . . . Biological Systems Engineering

Gardner, Scott — **University of Nebraska State Museum/ Biological Sciences**

CSBR: Natural History: Digitizing and Conserving Specimens in the Manter Laboratory of Parasitology

$499,988 . . . . . NSF
Diamond, Judy . . . . . University of Nebraska State Museum
Gettinger, Donald. . . . . University of Nebraska State Museum
Racz, Gabor . . . . . University of Nebraska State Museum

CSBR: Natural History: Securing and Digitizing Data for Parasite Biodiversity Specimens in the Manter Laboratory

$499,991 . . . . . NSF
Racz, Gabor . . . . . University of Nebraska State Museum

Gaussoin, Roch — **Agronomy and Horticulture**

Development of Quality Protein Popcorn as a Non-GMO Approach to Enhanced Nutritional Quality, Pop Volume and Flavor Profile

$694,200 . . . . . ConAgra
Holding, David . . . . . Agronomy and Horticulture
Rodriguez, Oscar . . . . . Agronomy and Horticulture
Rose, Devin . . . . . Food Science and Technology

Gay, Timothy — **Physics and Astronomy**

Accurate Electron Spin Optical Polarimetry (AESOP)

$565,000 . . . . . NSF

Polarized Electron Physics

$642,714 . . . . . NSF

Ge, Yufeng — **Biological Systems Engineering**

*CPS: 3D Dynamic Soil Information System Enabled by UAV and Proximal Depth Sensing

$717,698 . . . . . USDA-NIFA
Shi, Yeyin . . . . . Biological Systems Engineering
Yu, Hongfeng . . . . . Computer Science and Engineering
Zhou, Yuzhen . . . . . Statistics

VisNIR-Based Multi-sensing Penetrometer for in situ High-resolution Depth Sensing of Soils

$499,896 . . . . . USDA-NIFA

PAPM EAGER: Transitioning to the Next-generation Plant Phenotyping Robots

$285,000 . . . . . USDA-NIFA
Pitla, Santosh . . . . . Biological Systems Engineering
Schnable, James . . . . . Biological Systems Engineering

IDBR: Type A: Multispectral Laser 3D Ranging and Imaging System for Plant Phenotyping

$534,194 . . . . . NSF
Walia, Harkamal . . . . . Agronomy and Horticulture
Yu, Hongfeng . . . . . Computer Science and Engineering

Gilmore, Troy — **Natural Resources**

Evaluation of Watershed-scale Groundwater Transit Time Distributions from Field Sampling and Numerical Modeling

$387,030 . . . . . NSF
Mittelstet, Aaron . . . . . Biological Systems Engineering
Zlotnik, Vitaly . . . . . Earth and Atmospheric Sciences

Gogos, George — **Mechanical & Materials Engineering**

Highly Permanent Biomimetic Micro/Nanostructured Surfaces by Femtosecond Laser Surface Processing for Thermal Management Systems

$563,131 . . . . . NASA-EPSCoR through UNO
Alexander, Dennis . . . . . Electrical and Computer Engineering
Ianno, Natale . . . . . Electrical and Computer Engineering
Ndao, Sidy . . . . . Mechanical & Materials Engineering
Shield, Jeffrey . . . . . Mechanical & Materials Engineering

Golick, Douglas — **Entomology**

*Building Undergraduate Research and Science Communication Skills through Beneficial Insects Protection Research and Extension Experiences (FACT)

$344,767 ..... USDA-NIFA
Anderson, Troy ..... Entomology
Brewer, Gary ..... Entomology
Dauer, Jenny ..... Natural Resources
Louis, Joe ..... Entomology
McMechan, Justin ..... Eastern Nebraska Research and Extension Center
Peterson, Julie ..... West Central Research and Extension Center
Velez Arango, Ana Maria ..... Entomology
Weissling, Tom ..... Entomology
Wu-Smart, Judy ..... Entomology

Community as Habitat: Nebraska Communities Supporting Pollinators and Landscape Diversity through Native Waterwise Plant Habitats

$364,520 ..... Nebraska Environmental Trust
Evertson, Justin ..... Nebraska State Forest Service

Graef, George — **Agronomy and Horticulture**

Utilizing Unique Genetic Diversity to Combine Elevated Protein Concentration with High Yield in New Varieties and Experimental Lines

$524,867 ..... United Soybean Board/Smith/Bucklin
Hyten, David Jr. ..... Agronomy and Horticulture

Increasing the Rate of Genetic Gain for Yield in Soybean Breeding Programs

$282,668 ..... North Central Soybean Research Program through Ohio State University
Ge, Yufeng ..... Biological Systems Engineering
Hyten, David Jr. ..... Agronomy and Horticulture

Soybean Breeding and Genetic Studies for Nebraska

$286,060 ..... Nebraska Soybean Board

Grassini, Patricio — **Agronomy and Horticulture**

Developing a Platform to Monitor N Footprint in Agro-Ecosystems

$431,000 ..... USDA-NIFA
Brozovic, Nicholas ..... Agricultural Economics/Robert B. Daugherty Water for Food Institute
Gibson, Kate ..... Robert B. Daugherty Water for Food Institute
Rattalino Edreira, Juan Ignacio ..... Agronomy and Horticulture

Benchmarking Soybean Production Systems in the North-Central USA

$872,920 ..... North Central Soybean Research Program

Griep, Mark — **Chemistry**

Framing the Chemistry Curriculum

$749,285 ..... NSF

REU Site: Research Experiences for Undergraduates in Chemical Assembly at the University of Nebraska

$339,683 ..... NSF

Gruverman, Alexei — **Physics and Astronomy/Nebraska Center for Materials and Nanoscience**

Domain Wall Engineering for Novel Nanoelectronics

$338,422 ..... NSF

Gupta, Jhinuk — **Food Science and Technology**

Tobacco Starch Isolation and Characterization

$446,250 ..... R.J. Reynolds Tobacco Company
Danao, Mary-Grace ..... Food Science and Technology
Weller, Curtis ..... Food Science and Technology

Guretzky, John — **Agronomy and Horticulture**

Developing Research and Extension Skills of Students in Integrated Agronomic Systems

$275,667 ..... USDA-NIFA
Blanco, Humberto ..... Agronomy and Horticulture
Elmore, Roger ..... Agronomy and Horticulture
Howell Smith, Michelle ..... Nebraska Center for Research on Children, Youth, Families and Schools
Redfearn, Daren ..... Agronomy and Horticulture

Harwood, David — **Earth and Atmospheric Sciences/Antarctic Drilling Program**

Subglacial Antarctic Lakes Scientific Access (SALSA): Integrated Study of Carbon Cycling in Hydrologically Active Subglacial Environments

$332,346 ..... NSF through Montana State University
McManis, James ..... Engineering/Antarctic Drilling Program

Heaton, Ruth — **Teaching, Learning and Teacher Education/ Nebraska Center for Research on Children, Youth, Families and Schools/ Center for Science, Mathematics and Computer Education**

Math Early On II
$662,227 ..... Buffett Early Childhood Fund
Leeper Miller, Jennifer ..... Child, Youth and Family Studies
Molfese, Victoria ..... Child, Youth and Family Studies/ Nebraska Center for Research on Children, Youth, Families and Schools/ Center for Science, Mathematics and Computer Education

Hebets, Eileen — **Biological Sciences**

A Comparative Systems Approach to Complex Animal Signaling
$657,502 ..... NSF

Navigation and the Neural Integration of Multimodal Sensory Information in the Brain of an Arthropod
$285,215 ..... NSF

Hermiller, Susan — **Mathematics**

Topology and Geometry of Cayley Graphs for Groups
$251,096 ..... NSF

Hong, Xia — **Physics and Astronomy/ Nebraska Center for Materials and Nanoscience**

Exploring Spin-Orbit Coupling and Correlated Phenomena in Iridate-based Ferroelectric Transistors and Tunnel Junctions
$499,012 ..... NSF

Nanoscale Ferroelectric Control of Novel Electronic States in Layered Two-dimensional Materials
$750,262 ..... DOE

Hope, Debra — **Psychology**

Community Partnership to Identify Intervention Targets to Improve Mental Health Services to Transgender Individuals in Underserved Areas
$399,418 ..... NIH-NIMH

Housh, Terry — **Nutrition and Health Sciences/ Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules**

Bioavailability and Distribution of Bovine Milk Exosomes and their RNA, Lipid and Protein Cargos in Mice
$347,185 ..... PureTech Health
Zempleni, Janos ..... Nutrition and Health Sciences/ Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules

Houston, Adam — **Earth and Atmospheric Sciences**

*Targeted Observation by Radars and UAS of Supercells (TORUS)
$725,926 ..... NSF

Investigating Soil Moisture-Convective Precipitation Feedbacks with Soil Moisture Active Passive
$402,364 ..... NASA through The Ohio State University

NRI: Targeted Observation of Severe Local Storms Using Aerial Robots
$425,652 ..... NSF

Hughes, Michelle — **Special Education and Communication Disorders**

*Telepractice for Cochlear Implants
$319,682 ..... NIH-NIDCD
Wheeler, Lorey ..... Nebraska Center for Research on Children, Youth, Families and Schools

*Physiology as a Potential Predictor of Perception in Cochlear Implants
$291,566 ..... NIH-NIDCD
Wheeler, Lorey ..... Nebraska Center for Research on Children, Youth, Families and Schools

Hunt, Thomas — **Northeast Research and Extension Center**

Evaluating the Efficacy of Insect Resistance Management Plans for Delaying the Onset of *Bacillus Thuringiensis* Toxin Resistance in Western Bean Cutworm Populations
$492,497 ..... USDA-NIFA
Peterson, Julie ..... West Central Research and Extension Center

Hutkins, Robert — **Food Science and Technology**

Digestive Tract Microbiome in Healthy Term Infants Receiving Mothers-own Breast Milk or Cows Milk-based Infant Formulas
$295,749 ..... Mead Johnson Nutrition
Izard, Jacques ..... Food Science and Technology

Ianno, Natale — **Electrical and Computer Engineering**

REU Site: Research Experience for Undergraduates in Nanohybrid Functional Materials

$306,032 ..... NSF

Jhala, Amitkumar — **Agronomy and Horticulture**

Pollen-Mediated Gene Flow from Acetolactate Synthase-Inhibiting Herbicide-Resistant Sorghum to Johnsongrass

$296,286 ..... E. I. Dupont
Lindquist, John ..... Agronomy and Horticulture

Johnson, Phillip — **Food Science and Technology**

*Robust Methods for Food Allergen Detection and Quantitative Risk Assessment

$424,742 ..... USDA-NIFA
Baumert, Joseph ..... Food Science and Technology
Downs, Melanie ..... Food Science and Technology
Marsh, Justin ..... Food Science and Technology

Kelling, Clayton — **Veterinary Medicine and Biomedical Sciences**

Establishing One Health Best Practices for Range Bison Herds

$400,000 ..... DHHS-CDC-NIOSH through UNMC

Keshwani, Deepak — **Biological Systems Engineering**

Immersive Educational Game Simulations to Enhance Understanding of Corn-Water Ethanol-Beef System Nexus

$999,644 ..... NSF
Chen, Jiajia ..... Food Science and Technology
Keshwani, Jenny ..... Biological Systems Engineering
Koelsch, Richard ..... Biological Systems Engineering
Rosenbaum, David ..... Bureau of Business Research
Thompson, Eric ..... Bureau of Business Research

Khan, Bilal — **Sociology**

Applying Behavioral Ecological Network Models to Enhance Distributed Spectrum Access in Cognitive Radio

$296,969 ..... NSF
Dombrowski, Kirk ..... Sociology

Kim, Surin — **Textiles, Merchandising and Fashion Design**

Leveraging Community Connections, Local Issues, and Youth High Tech Entrepreneurship Education to Nurture Rural Economic Opportunities

$493,560 ..... USDA-NIFA
De Guzman, Maria ..... Child, Youth and Family Studies
Guru, Ashu ..... 4-H State Office
Nicholas, Claire ..... Textiles, Merchandising and Fashion Design

Kim, Yong Rak — **Civil Engineering/ Nebraska Transportation Center**

Identification and Modeling of Interphase in Cementitious Mixtures through Integrated Experimental-Computational Multiscale Approach

$275,362 ..... NSF
Turner, Joseph ..... Mechanical & Materials Engineering/ Nebraska Transportation Center

Knoche, Lisa — **Nebraska Center for Research on Children, Youth, Families and Schools**

*Getting Ready Preschool Development Grant PDG

$318,116 ..... DHHS-ACF-Nebraska Department of Health and Human Services through Nebraska Children and Families Foundation

Korus, Jesse — **Natural Resources**

Nebraska GeoCloud: An Integrated Bedrock Mapping and Hydrogeologic Framework Database and Map Viewer

$264,014 ..... Nebraska Department of Natural Resources through Lower Platte South NRD
Cameron, Kathleen ..... Natural Resources
Joeckel, Matt ..... Natural Resources

Kovalev, Alexey — **Physics and Astronomy**

Statistical Mechanics of Non-Local Disordered Models with Associated Quantum LDPC Codes

$255,000 ..... NSF

Krehbiel, Michelle — **Extension**

Nebraska CYFAR Sustainable Community Project

$648,750 ..... USDA-NIFA
Chai, Weiwen ..... Nutrition and Health Sciences
Fischer, Jean ..... Nutrition and Health Sciences
Franzen-Castle, Lisa ..... Nutrition and Health Sciences
Jones, Georgia ..... Nutrition and Health Sciences

Lackey, Susan — **Natural Resources**

Developing Hydrogeologic Databases to Assist in Water Resources Management

$654,700 ..... Lower Elkhorn NRD

Lawrence, Nevin — **Panhandle Research and Extension Center**

*BARRAL - Bioenergy, Advanced Biofuel and Rubber Research Agricultural Linkages

$500,001 ..... USDA-NIFA through Ohio State University
Maharjan, Bijesh ..... Panhandle Research and Extension Center
Qiao, Xin ..... Panhandle Research and Extension Center

Lechtenberg, Karla — **Midwest Roadside Safety Facility**

Crash Testing MoDOT Devices
$376,367 . . . . . Missouri Department of Transportation through Nebraska Department of Roads
Faller, Ronald . . . . . Midwest Roadside Safety Facility
Holloway, Jim . . . . . Midwest Roadside Safety Facility
Rasmussen, Jennifer . . . . . Midwest Roadside Safety Facility

Lewis, Elizabeth — **Teaching, Learning and Teacher Education**

Longitudinal Evaluation of Noyce Science Teachers to Determine Sources of Effective Teaching
$799,890 . . . . . NSF
Claes, Daniel . . . . . Physics and Astronomy
Harwood, David . . . . . Earth and Atmospheric Sciences
Heng-Moss, Tiffany . . . . . College of Agricultural Sciences and Natural Resources

Lewis, Ronald — **Animal Science**

Understanding Parasite Resistance in Organic Livestock and Using a Systems Approach for Control
$291,478 . . . . . USDA-ARS

Li, Qingsheng — **Biological Sciences/ Nebraska Center for Virology**

Impact of Fc N-glycan Structure on HIV-specific Antibody Functions
$438,219 . . . . . NIH-NIAID through University of Wyoming

Long-acting Antiretroviral Nanoparticles for HIV Prophylaxis
$259,125 . . . . . NIH-NIAID through Creighton University

Li, Xu — **Civil Engineering**

*Antibiotic Resistance Genes in the Soil-Plant Ecosystem
$330,000 . . . . . NSF
Snow, Daniel . . . . . Nebraska Water Center
Walia, Harkamal . . . . . Agronomy and Horticulture

Lindquist, John — **Agronomy and Horticulture**

A Risk-assessment Model and Population Genomics Tools for Monitoring Herbicide-resistance Evolution in Weedy Sorghum
$499,998 . . . . . USDA-NIFA
Jhala, Amit . . . . . Agronomy and Horticulture
Sigmon, Brandi . . . . . Agronomy and Horticulture
Tenhumberg, Brigitte . . . . . Mathematics/Biological Sciences

Lodl, Kathleen — **Extension**

*EAGER: Empowering Out-of-School-Time Educators and Students through 4-H and the Land-Grant System
$299,950 . . . . . NSF
Frerichs, Saundra . . . . . Extension
Guru, Ashu . . . . . Extension
Hawley, Leslie . . . . . Nebraska Center for Research on Children, Youth, Families and Schools
Wheeler, Lorey . . . . . Nebraska Center for Research on Children, Youth, Families and Schools

Lu, Yongfeng — **Electrical and Computer Engineering**

*Fabrication and Verification of Fuel Targets for Laser Fusion Research
$296,637 . . . . . DOE through University of Rochester

Radar 2021
$740,025 . . . . . Honeywell FM & T

High-power Laser System for Repairing Al-Mg Alloy Ship Plates
$349,506 . . . . . DoD-ONR-DURIP

Post-Detonation Radiological and Nuclear Forensics Using Laser-Assisted Mass Spectrometry in Open Air
$750,000 . . . . . DoD-DTRA

Vertically Aligned Carbon-Nanotubes Embedded in Ceramic Matrices for Hot Electrode Applications
$400,000 . . . . . DOE-NETL

Diamond Coating Adaptive to Substrate Materials Using a Diamond-Composite Buffer Layer
$793,342 . . . . . DoD-MDA

Luck, Joe — **Biological Systems Engineering**

Using Precision Technology in On-farm Field Trials to Enable Data-intensive Fertilizer Management
$513,798 . . . . . USDA-NIFA through University of Illinois at Urbana-Champaign
Ferguson, Richard . . . . . Agronomy and Horticulture
Glewen, Keith . . . . . Agronomy and Horticulture
Mieno, Taro . . . . . Agricultural Economics
Thompson, Laura . . . . . Agronomy and Horticulture

Next-generation Spray Drift Mitigation via
Field-deployable, Real-time Weather Monitoring and
Novel Spray Nozzle Control Technologies
$499,916 ..... USDA-NIFA
Kruger, Greg ..... West Central Research and Extension Center
Pitla, Santosh ..... Biological Systems Engineering

Males, Lorraine — **Teaching, Learning and Teacher Education**

Examining the Impact of the CPM Implementation
in an Urban District
$384,753 ..... College Preparatory Mathematics (CPM)
Educational Program

Mamo, Martha — **Agronomy and Horticulture**

Fostering the Next Generation of Agricultural and
Natural Resources Professionals through Experiential Learning
in Research, Education and Extension
$281,475 ..... USDA-NIFA
Keshwani, Jennifer ..... Biological Systems Engineering
Lambe, David ..... Agronomy and Horticulture
Lee, Donald ..... Agronomy and Horticulture
Matkin, Gina ..... Agricultural Leadership,
Education and Communication
Sandall, Leah ..... Agronomy and Horticulture
Schacht, Walter ..... Agronomy and Horticulture
Speth, Carol ..... Agronomy and Horticulture

Grazing Management Effect on Micro- and Macro-Scale Fate
of Carbon and Nitrogen in Rangelands
$497,000 ..... USDA-NIFA
Bradshaw, Jeffrey ..... Panhandle Research and Extension Center
Eskridge, Kent ..... Statistics
Ferguson, Richard ..... Agronomy and Horticulture
Guretzky, John ..... Agronomy and Horticulture
Jenkins, Karla ..... Panhandle Research and Extension Center
Schacht, Walter ..... Agronomy and Horticulture
Volesky, Jerry ..... West Central Research and Extension Center
Wingeyer, Ana ..... Agronomy and Horticulture
Yang, Haishun ..... Agronomy and Horticulture

Markham, Jonathan — **Biochemistry**

Plant Sphingolipids: New Targets for
Engineering Cold-Tolerance in Crops
$408,000 ..... USDA-NIFA
Cahoon, Edgar ..... Biochemistry

Meinke, Lance — **Entomology**

Characterizing Resistance Evolution to Pyrethroid Insecticides
$528,340 ..... Monsanto

Messer, Tiffany — **Biological Systems Engineering**

Photodegradation of Insecticides in Rivers Adjacent to Agricultural
Intensive Regions: A Novel Water Quality Monitoring Approach
$498,500 ..... USDA-NIFA
Snow, Daniel ..... Water Center

Montooth, Kristi — **Biological Sciences**

*RoL: FELS: EAGER: A Predictive Framework of Metabolism
as an Engine of Functional Environmental Responses
across Levels of Biological Organization
$299,999 ..... NSF
DeLong, John ..... Biological Sciences

Moreau, Regis — **Nutrition and Health Sciences**

Bioactivity of Curcumin and Gut Inflammation
$480,214 ..... USDA-NIFA
Hage, David ..... Chemistry

Munoz-Arriola, Francisco — **Biological Systems Engineering**

From Gene to Global Hydroclimatic Controls
on Hybrid Performance Predictability
$490,000 ..... USDA-NIFA
Hernandez Jarquin, Juan Diego ..... Agronomy and Horticulture

Nastasi, Michael — **Mechanical & Materials Engineering/ Nebraska Center for Energy Sciences Research**

Radiation Tolerance and Mechanical Properties
of Advanced Ceramic/Metal Composites
$994,292 ..... DOE

Neale, Christopher — **Biological Systems Engineering/ Robert B. Daugherty Water for Food Institute**

Improving Variable Rate Irrigation Efficiency using
a Real-time Soil Water Adaptive Control Model
Informed by Sensors Deployed on Unmanned Aircraft Systems
$499,978 ..... USDA-NIFA
Ge, Yufeng ..... Biological Systems Engineering
Heeren, Derek ..... Biological Systems Engineering
Luck, Joe ..... Biological Systems Engineering
Meyer, George ..... Biological Systems Engineering
Woldt, Wayne ..... Biological Systems Engineering

Nguyen, Lim — **Electrical and Computer Engineering**

ABC Group SRA: Center for Electromagnetic Concrete R&D and Shielding Innovations

$301,408 . . . . . American Business Continuity Domes, Inc.

Niu, Wei — **Chemical and Biomolecular Engineering/ Nebraska Center for Energy Sciences Research**

*Engineering Carboxylic Acid Reductase for the Biosyntheses of Industrial Chemicals

$335,516 . . . . . NSF
Guo, Jiantao . . . . . Chemistry/Nebraska Center for Energy Sciences Research
Wilson, Mark . . . . . Biochemistry/Nebraska Center for Energy Sciences Research

SusChEM: Novel 1,2-Propanediol Biosynthesis from Renewable Feedstocks through Enzyme Discovery

$317,611 . . . . . NSF
Guo, Jiantao . . . . . Chemistry

Nugent, Gwen — **Nebraska Center for Research on Children, Youth, Families and Schools**

Analysis of Effective Science Coaching: What, Why and How

$699,584 . . . . . NSF
Houston, James . . . . . Nebraska Center for Research on Children, Youth, Families and Schools
Kunz, Gina . . . . . Nebraska Center for Research on Children, Youth, Families and Schools

Odhiambo, Lameck — **Biological Systems Engineering**

Reconfiguring Farmers' Behavior to Reduce Irrigation Water Use through Water Measurements and Social Norms Interventions: A Case Study in the Republican River Basin

$453,539 . . . . . USDA-NIFA
Olson, Kristen . . . . . Sociology

Otu, Hasan — **Electrical and Computer Engineering**

Identification and Characterization of Interaction Atlases in Humans

$399,477 . . . . . DHHS-National Library of Medicine
Sayood, Khalid . . . . . Electrical and Computer Engineering

Pannier, Angela — **Biological Systems Engineering**

Understanding Molecular Factors that Regulate Initiation of Porcine Embryo Elongation

$465,000 . . . . . USDA-NIFA

Pérez, Lance — **Electrical and Computer Engineering**

Spatial Visualization Skills and Engineering Problem Solving

$645,943 . . . . . NSF

A Chautauqua Program for the 21st Century

$448,603 . . . . . NSF

Petersen, Jessica — **Animal Science**

*Annotation of Functional Regulatory Regions in the Horse

$500,000 . . . . . USDA-NIFA

Piepenbrink, Kurt — **Food Science and Technology**

Structural Basis of Type IV Pilus-Induced *Clostridium difficile* Microcolony Formation

$259,560 . . . . . NIH-NIAID

Pierobon, Massimiliano — **Computer Science and Engineering**

CIF: Small: WetComm: Foundations of Wet Communication Theory

$515,528 . . . . . NSF
Niu, Wei. . . . . Chemical and Biomolecular Engineering

Pitla, Santosh — **Biological Systems Engineering**

In-field Tractor Operational Load Profile Generation in Support of Advanced Tractor Testing in Mixed-mode Power States

$472,887 . . . . . USDA-NIFA
Hoy, Roger. . . . . Biological Systems Engineering
Luck, Joe . . . . . Biological Systems Engineering
Rohrer, Rodney . . . . . Biological Systems Engineering

Powell, Larkin — **Natural Resources**

Management of Private Grazing Lands in Nebraska: Do Differences in Ranch Management and Landowner Characteristics Affect Conservation Impacts

$344,521 . . . . . Nebraska Game and Parks Commission
Schacht, Walter . . . . . Agronomy and Horticulture

Persistent Effects of Wind-Power Development on Prairie Grouse in Nebraska

$717,487 . . . . . Nebraska Game and Parks Commission
Brown, Mary . . . . . Natural Resources
Fontaine, Joseph . . . . . Natural Resources

Powers, Robert — **Chemistry**

ABI Innovation: A Metabolomics Toolkit for NMR and Mass Spectrometry

$695,000 . . . . . NSF

Proctor, Christopher — **Agronomy and Horticulture**

Optimizing Cropping Systems for Resilience to Stress: The Role of Maturity Group Selection and Cover Crops on Yield, Weeds, Insects and Microbes

$461,187 ..... USDA-NIFA
Drewnoski, Mary ..... Animal Science
Everhart, Sydney ..... Plant Pathology
McMechan, Anthony ..... Eastern Nebraska Research and Extension Center
Parsons, Jay ..... Agricultural Economics
Redfearn, Daren ..... Agronomy and Horticulture

Qian, Yi — **Electrical and Computer Engineering**

Spectrum and Energy Efficient Radio Resource Access in Wireless Networks with Densely Deployed Underlay Devices

$300,000 ..... NSF
Sharif-Kashani, Hamid ..... Electrical and Computer Engineering

Qiao, Wei — **Electrical and Computer Engineering**

Online Nonintrusive Identification and Monitoring of Internal Weak Points of Electro-energy Devices Using Package Surface Temperature

$337,897 ..... NSF

Qiao, Xin — **Panhandle Research and Extension Center**

*SCC: An Integrated and Smart System for Irrigation Management in Rural Communities

$541,048 ..... USDA-NIFA through University of Iowa
Rudnick, Daran ..... West Central Research and Extension Center
Yang, Haishun ..... Agronomy and Horticulture

Radu, Petronela — **Mathematics**

Higher Order Nonlocal Models in Continuum Mechanics

$354,089 ..... NSF
Foss, Mikil ..... Mathematics

Raikes, Helen — **Child, Youth and Family Studies**

Evaluation of Early Steps to School Success

$734,694 ..... Save the Children

Rajca, Andrzej — **Chemistry**

Organic Nanoparticles for Dual MRI-Guided Therapeutic Selection and Ovarian Cancer Drug Delivery

$316,735 ..... NIH-NCI through Massachusetts Institute of Technology

Nitrogen-Centered Radicals

$495,000 ..... NSF

Ramamurthy, Byravamurthy — **Computer Science and Engineering**

*NeTS: Small: Intelligent Optical Networks using Virtualization and Software-Defined Control

$466,000 ..... NSF

CC*DNI Integration: Innovating Network Cyberinfrastructure through Openflow and Content Centric Networking in Nebraska

$572,112 ..... NSF
Swanson, David ..... Computer Science and Engineering

Rasby, Rick — **Extension**

Nebraska Extension Implementation Program

$627,447 ..... USDA-NIFA
Bradshaw, Jeffrey ..... Panhandle Research and Extension Center
Glewen, Keith ..... Southeast Research and Extension Center
Green, Jody ..... Southeast Research and Extension Center
Jackson-Ziems, Tamra ..... Plant Pathology
Jhala, Amitkumar ..... Agronomy and Horticulture
Larson, Jonathan ..... Southeast Research and Extension Center
Ogg, Clyde ..... Agronomy and Horticulture
Wright, Robert ..... Entomology
Wu-Smart, Judy ..... Entomology

Rasmussen, Jennifer — **Midwest Roadside Safety Facility**

Determination of Zone of Intrusion Envelopes under MASH Impact Conditions for Rigid Barrier

$400,000 ..... National Academy of Sciences-NCHRP
Bielenberg, Robert ..... Midwest Roadside Safety Facility
Faller, Ronald ..... Midwest Roadside Safety Facility
Stolle, Cody ..... Midwest Roadside Safety Facility

Ray, Chittaranjan — **Water Center/Civil Engineering/ Robert B. Daugherty Water for Food Institute**

Sustaining Agriculture through Adaptive Management Resilient to a Declining Ogallala Aquifer and Changing Climate

$918,791 ..... USDA-NIFA through Colorado State University
Rudnick, Daran ..... West Central Research and Extension Center/ Robert B. Daugherty Water for Food Institute
Schoengold, Karina .... Agricultural Economics/Robert B. Daugherty Water for Food Institute
Shaver, Tim ..... West Central Research and Extension Center/ Robert B. Daugherty Water for Food Institute

Integrating the Vadose Zone for Improved Management of Nebraska Ground Water Quality

$384,227 ..... Nebraska Environmental Trust
Snow, Daniel ..... Water Center/ Robert B. Daugherty Water for Food Institute

Reddy, N.R. Jayagopala — **Veterinary Medicine and Biomedical Sciences**

*Prevention of Viral Cardiomyopathy and Insulitis by Vaccination
$300,000 ..... American Heart Association
Kidambi, Srivatsan ..... Chemical and Biomolecular Engineering
Steffen, David ..... Veterinary Medicine and Biomedical Sciences

Riekhof, Wayne — **Biological Sciences**

The Life History and Systems Biology of Fungal-Algal Mutualisms
$639,910 ..... NASA
Harris, Steven ..... Plant Pathology
Herr, Joshua ..... Plant Pathology

Rilett, Laurence — **Civil Engineering/ Nebraska Transportation Center**

*Research and Equipment Enhancement
$336,544 ..... DOT-FHWA through Nebraska Department of Transportation
Faller, Ronald ..... Midwest Roadside Safety Facility/ Nebraska Transportation Center

Rosenbaugh, Scott — **Midwest Roadside Safety Facility**

Cost-efficient, TL-2 Bridge Rail for Low-volume Roads
$309,141 ..... DOT-FHWA through Nebraska Department of Transportation
Bielenberg, Robert ..... Midwest Roadside Safety Facility
Faller, Ronald ..... Midwest Roadside Safety Facility

Saraf, Ravi — **Chemical and Biomolecular Engineering**

High Specificity MicroRNA Microarray Analysis without PCR for Cancer Screening and Research
$490,048 ..... NIH-NCI

Scalora, Mario — **Public Policy Center/Psychology**

The Influence of Subjective and Objective Rural School Security on Law Enforcement Engagement Models
$645,952 ..... DOJ-NIJ
Bulling, Denise ..... Public Policy Center
DeKraai, Mark ..... Public Policy Center

Schmidt, Tyler — **Animal Science**

*Utilization of an Advanced Computer Vision Platform to Identify Changes in the Physiological and Behavioral Changes Associated with Illness and Aggressive/Damaging Behavior during the Nursery and Finisher Phase
$301,793 .... Foundation for Food and Agriculture Research through National Pork Board
Mote, Benny ..... Animal Science
Pérez, Lance ..... Electrical and Computer Engineering
Psota, Eric ..... Electrical and Computer Engineering

Schnable, James — **Agronomy and Horticulture/ Center for Plant Science Innovation**

*RoL: FELS: EAGER: Genetic Constraints on the Increase of Organismal Complexity Over Time
$299,801 ..... NSF

High-throughput, High-resolution Phenotyping of Nitrogen Use Efficiency Using Coupled In-plant and In-soil Sensors
$334,169 ..... DOE-ARPA-E through Iowa State University

Identifying Mechanisms Conferring Low Temperature Tolerance in Maize, Sorghum, and Frost-tolerant Relatives
$455,000 ..... USDA-NIFA
Roston, Rebecca ..... Biochemistry/ Center for Plant Science Innovation

Schubert, Mathias — **Electrical and Computer Engineering**

The Influence of Doping and Annealing onto the Lattice Dynamics, Band Structure and Free Charge Carrier Properties in Monoclinic Gallium Aluminum Oxide Semiconductor Alloys
$430,052 ..... NSF
Korlacki, Rafal. ..... Electrical and Computer Engineering

The Strain-Stress Relationships for Band Gap, Phonon and Plasmon Energies in Monoclinic Ga2O3 and Related Materials
$323,393 ..... DoD-AFOSR

Searls, Mindi — **Earth and Atmospheric Sciences/ Center for Science, Mathematics and Computer Education**

GP-IMPACT: Building a Comprehensive Geoscience Learning Experience
$400,075 ..... NSF
Arthurs, Leilani ..... Earth and Atmospheric Sciences/ Center for Science, Mathematics and Computer Education
Bathke, Deborah ..... Earth and Atmospheric Sciences
Harwood, David ..... Earth and Atmospheric Sciences

Sellmyer, David — **Physics and Astronomy/ Nebraska Center for Materials and Nanoscience**

*MRI: Acquisition of a Low-temperature High-magnetic-field Multifunctional Scanning Probe Microscopy System
$330,530 ..... NSF
Xu, Xiaoshan ..... Physics and Astronomy/ Nebraska Center for Materials and Nanoscience

DMREF: Design and Synthesis of Novel Magnetic Materials
$511,155 ..... NSF
Xu, Xiaoshan ..... Physics and Astronomy

Shadwick, Bradley — **Physics and Astronomy**

Generation and Control of Self-organized Nonlinear Kinetic Structures in High-energy Density Plasmas in the Presence of Intense Magnetic Fields and Ultrashort Laser Pulses
$632,020 ..... DOE

High Fidelity Modeling of Laser-Plasma Accelerators
$524,991 ..... NSF
Kalmykov, Serge ..... Physics and Astronomy

Sharif-Kashani, Hamid — **Electrical and Computer Engineering**

Wireless Digital Train Line for Passenger Trains: Exploring Railroad Requirements, Achieving Synergy, and Designing WiDTL for Next-generation Passenger Rail Services
$300,045 ..... DOT-FRA
Hempel, Michael ..... Electrical and Computer Engineering

Shen, Zhigang — **Durham School of Architectural Engineering and Construction**

*A Fast and Low-cost Method to Automate Detecting, Locating and Mapping Internal Gas Pipeline Corrosion using Pig-mounted Thermal and Stereo Cameras
$299,980 ..... DOT-PHMSA

Shield, Jeffrey — **Mechanical & Materials Engineering/ Nebraska Center for Materials and Nanoscience**

*Faculty Development Program in Nuclear Engineering at University of Nebraska–Lincoln
$450,000 ..... U. S. Nuclear Regulatory Commission
Cui, Bai ..... Mechanical & Materials Engineering
Nastasi, Michael ..... Mechanical & Materials Engineering/ Nebraska Center for Energy Sciences Research

Grain and Interface Engineering for High-efficiency Hybrid Perovskite Solar Cells
$450,000 ..... DoD-AFOSR

Sinitskii, Alexander — **Chemistry**

Extended Atomically Precise Graphene Nanoribbons and Nanostructures with Improved Electrical Conductivity
$768,496 ..... DoD-ONR

Smith, Wendy — **Mathematics/Center for Science, Mathematics and Computer Education**

*Persistence, Effectiveness and Retention Studies in STEM Teaching
$392,264 ..... NSF
Augustyn, Lindsay ..... Center for Science, Mathematics and Computer Education
Funk, Rachel ..... Center for Science, Mathematics and Computer Education

Teacher Leadership (T-LEAD): Investigating the Persistence and Trajectories of Noyce Master Teaching Fellows
$701,004 ..... NSF

Student Engagement in Mathematics through an Institutional Network for Active Learning
$332,442 ..... NSF
Donsig, Allan ..... Mathematics
Wakefield, Nathan ..... Mathematics

NebraskaNOYCE Phase II: Investigating the Impact in High-Need Districts
$349,864 ..... NSF
Lai, Yuan-Juang ..... Mathematics/Center for Science, Mathematics and Computer Education
Lewis, Jim ..... Mathematics/Center for Science, Mathematics and Computer Education
Males, Lorraine ..... Teaching, Learning and Teacher Education

Smyth, Jolene — **Sociology/ Survey Research and Methodology**

Using Statistical and Survey Methodology Research to Improve or Redesign Surveys Related to Science and Engineering

$460,000 ..... USDA-NASS

Olson, Kristen ..... Sociology/Survey Research and Methodology

Snow, Daniel — **Water Center/ Robert B. Daugherty Water for Food Institute**

Vadose Zone Nitrate Study for the City of Hastings, NE: 2015

$299,982 ..... City of Hastings, NE

Ray, Chittaranjan ..... Water Center/ Robert B. Daugherty Water for Food Institute

Soh, Leen-Kiat — **Computer Science and Engineering**

Computational Creativity to Improve Computer Science Education for CS and non-CS Undergraduates

$873,250 ..... NSF

Ingraham, Elizabeth ..... Art, Art History and Design

Moore, Brian ..... Music

Ramsay, Stephen ..... English

Shell, Duane ..... Educational Psychology

Spangler, Matthew — **Animal Science**

Beef Cattle Production System Decision Support Tools to Enable Improved Genetic, Environmental, and Economic Resource Management

$299,312 ..... USDA-NIFA

Starace, Anthony — **Physics and Astronomy**

Strong Field & Ultrafast Atomic and Molecular Processes

$457,000 ..... NSF

Stephenson, Mitchell — **Panhandle Research and Extension Center**

*Grazing Land Monitoring Cooperative for Adaptive Management

$250,000 ..... USDA-NRCS

Volesky, Jerry ..... West Central Research and Extension Center

Stevens, Jeffrey — **Psychology/ Center for Brain, Biology and Behavior**

Similarity as a Process Model of Intertemporal Choice

$655,576 ..... NSF

Soh, Leen-Kiat ..... Computer Science and Engineering/ Center for Brain, Biology and Behavior

Storz, Jay — **Biological Sciences**

Causes of Parallel Molecular Evolution: Insights from Protein Engineering

$262,752 ..... NSF

Moriyama, Hideaki ..... Biological Sciences

Stowell, Rick — **Biological Systems Engineering**

*Water and Nutrient Recycling: A Decision Tool and Synergistic Innovative Technology

$496,646 ..... USDA-NIFA through University of Arkansas

Heemstra, Jill ..... Northeast Research and Extension District

Schmidt, Amy ..... Biological Systems Engineering

Sutter, Eli — **Mechanical & Materials Engineering**

In-situ Electron Microscopy of DNA-guided Self-assembly and Reconfiguration of 3D Nanocrystal Superlattices

$534,231 ..... DoD-ARO

Sutter, Peter ..... Electrical and Computer Engineering

Hybrid Materials by Integration of Semiconductor Nanowires and Layered Crystals: Chemical Transformations and Functional Properties

$500,000 NSF

Sutter, Peter ..... Electrical and Computer Engineering

Svoboda, Mark — **Natural Resources**

*MENAdrought Empowering and Enhancing Drought Management Systems in the Middle East-North Africa (MENA) Region

$362,226 ..... USAID through International Water Management Institute

Bathke, Deborah ..... Natural Resources

Brozovic, Nicholas ..... Robert B. Daugherty Water for Food Institute

Hayes, Michael ..... Natural Resources

Jedd, Theresa ..... Natural Resources

Knutson, Cody ..... Natural Resources

Neale, Christopher ..... Robert B. Daugherty Water for Food Institute

Terry, Benjamin — **Mechanical & Materials Engineering**

Development of a Gastrointestinal Tissue Attachment Mechanism

$619,776 ..... Progenity, Inc.

En Route Care Patient Viability Technology Development

$308,015 ..... DoD-Offutt Air Force Base-STRATCOM through National Strategic Research Institute

Tsymbal, Evgeny — **Physics and Astronomy/ Nebraska Center for Materials and Nanoscience**

*Partnership for Research and Education in Multiferroic Polymer Nanocomposites between Tuskegee University and University of Nebraska–Lincoln

$627,217 ..... NSF through Tuskegee University
Dowben, Peter ..... Physics and Astronomy/ Nebraska Center for Materials and Nanoscience
Ducharme, Stephen ..... Physics and Astronomy/ Nebraska Center for Materials and Nanoscience
Shield, Jeffrey ..... Mechanical & Materials Engineering/ Nebraska Center for Materials and Nanoscience

Tucker, Shane — **University of Nebraska State Museum**

Highway Paleontology Program

$765,766 ..... DOT-FHWA through Nebraska Department of Transportation

Turner, Joseph — **Mechanical & Materials Engineering**

*PCC-3: Non-Destructive Testing (NDT) Microstructural Response Characterization and Impact

$500,000 ..... DoD-Air Force Research Lab through Rolls Royce Corporation

An Integrated Experimental and Computational Approach to Discover Biomechanical Mechanisms of Leaf Epidermal Morphogenesis

$385,927 ..... NSF

Development of Improved Product Performance through Optimization and Modeling of Engineering Materials, Processing, and Function

$312,282 ..... Amsted Industries

Twidwell, Dirac Jr. — **Agronomy and Horticulture**

Juniper Invasions and Landscape Intervention Potential: A Statewide Assessment

$967,451 ..... DOI-FWS through Nebraska Game and Parks Commission
Allen, Craig ..... Natural Resources

Umstadter, Donald — **Physics and Astronomy**

Detection of Buried and Hidden Explosives Using Laser-driven High-energy Electron Beams

$638,252 ..... DoD-Offutt Air Force Base-STRATCOM through National Strategic Research Institute
Banerjee, Sudeep ..... Physics and Astronomy
Chen, Shouyuan ..... Physics and Astronomy

Ultra-low Emittance Electron Beams from Laser-Plasma Photo-cathodes

$374,844 ..... NSF
Banerjee, Sudeep ..... Physics and Astronomy
Chen, Shouyuan ..... Physics and Astronomy

Van Den Broeke, Matthew — **Earth and Atmospheric Sciences**

Aeroecology as a Test-Bed for Interdisciplinary STEM Training

$391,463 ..... NSF through University of Oklahoma

Quantifying the Relative Roles of Progressive Land Use Change, Irrigation, and Remote Forcing in Southern Great Plains Precipitation Variability

$446,697 ..... NSF
Hu, Qi ..... Natural Resources
Oglesby, Robert ..... Earth and Atmospheric Sciences/ Natural Resources

van Dijk, Karin — **Biochemistry**

Engaging the Next Generation of Biochemists

$599,096 ..... NSF
Couch, Brian ..... Biological Sciences
Helikar, Tomas ..... Biochemistry
Roston, Rebecca ..... Biochemistry

Vu, Hiep — **Animal Science/Nebraska Center for Virology**

Development of a Broadly Protective Diva Marker Vaccine against Porcine Reproductive and Respiratory Syndrome Virus

$489,934 ..... USDA-NIFA
Osorio, Fernando ..... Veterinary Medicine and Biomedical Sciences/ Nebraska Center for Virology

Determine the Correlates of Protection against Porcine Reproductive and Respiratory Syndrome Viruses Infection

$477,635 ..... USDA-NIFA
Ma, Fangrui ..... Center for Biotechnology/ Nebraska Center for Virology
Osorio, Fernando ..... Veterinary Medicine and Biomedical Sciences/ Nebraska Center for Virology

Vuran, Can — **Computer Science and Engineering**

*NeTS: Small: Connected Barriers: Vehicle-to-barrier Communication and Networking for Single-vehicle Crash Safety Facility
$319,513 . . . . . NSF
Faller, Ronald . . . . . Midwest Roadside Safety Facility
Stolle, Cody . . . . . Midwest Roadside Safety Facility

SpecEES: CoSeC-RAN: Cognitive Secure Cloud RAN for Efficient Spectrum Sharing
$435,399 . . . . . NSF
Batur, Demet . . . . . Supply Chain Management and Analytics
Ryan, Jennifer . . . . . Supply Chain Management and Analytics
Yan, Qiben . . . . . Computer Science and Engineering

NeTS: Small: 2G for UG: High Data-rate and Long-range Communication Techniques for Wireless Underground Networks
$450,000 . . . . . NSF
Irmak, Suat . . . . . Biological Systems Engineering

NeTS: Small: Advancing Time Synchronization for Sustainable Wireless Networks
$500,000 . . . . . NSF
Zhong, Ziguo . . . . . Computer Science and Engineering

Wagner, William — **Biological Sciences**

The Consistency of Behavioral Plasticity Across Different Selective Contexts
$512,998 . . . . . NSF

Walia, Harkamal — **Agronomy and Horticulture**

UNL-VBC Collaboration: Using Plant Phenomics to Capture Dynamic Growth Responses in Maize
$521,500 . . . . . Valent USA

ABI Innovation: A Computational Framework for Integrating Image Informatics with Transcriptomics for Discovering Spatiotemporally Resolved Regulatory Gene Networks in Plants
$563,801 . . . . . NSF
Yu, Hongfeng . . . . . Computer Science and Engineering
Zhang, Chi . . . . . Biological Sciences
Zhang, Qi . . . . . Statistics

Walker, Judy — **Mathematics/Center for Science, Mathematics and Computer Education**

NSF INCLUDES: WATCH US — Women Achieving Through Community Hubs in the United States
$299,024 . . . . . NSF

Walker, Mark — **Mathematics**

*Free Resolutions, K-Theory and dg-Categories
$257,571 . . . . . NSF

Wang, Jian — **Mechanical & Materials Engineering**

*Bridging Microscale to Macroscale Mechanical Property Measurements and Predication of Performance Limitation for FeCrAl Alloys under Extreme Reactor Applications
$799,270 . . . . . DOE
Nastasi, Michael . . . . Nebraska Center for Energy Sciences Research

Computational and Experimental Characterization of Twin-Twin Interactions in Hexagonal Metals
$388,037 . . . . . NSF

Plasticity of High-strength Multiphase Metallic Composites
$250,018 . . . . . DOE through University of Michigan

Wang, Lily — **Durham School of Architectural Engineering and Construction**

Evidence-Based Interactions between Indoor Environmental Factors and Their Effects on K-12 Student Achievement
$998,433 . . . . . EPA
Bovaird, James . . . . . Educational Psychology
Lau, Josephine . . . . . Durham School of Architectural Engineering and Construction
Waters, Clarence . . . . . Durham School of Architectural Engineering and Construction

Weaver, Eric — **Biological Sciences/ Nebraska Center for Virology**

Foundation Immunogens for Influenza Vaccines
$629,370 . . . . . NIH-NIAID

Weller, Curtis — **Food Science and Technology**

Enhancing Low-moisture Food Safety by Improving Development and Implementation of Pasteurization Technologies
$943,617 . . . . . USDA-NIFA through Michigan State University

Whitbeck, Les — **Sociology**

Stress and Type 2 Diabetes among Indigenous Adults
$260,343 . . . . . NIH-NIDDK through University of Minnesota Duluth
Crawford, Devan . . . . . Sociology
Hartshorn, Kelley . . . . . Sociology

White, Brett — **Animal Science**

Role of GnRH-II and Its Receptor in Testicular Function of Swine
$480,000 ..... USDA-NIFA

Wiener, Richard — **Psychology**

Therapeutic Jurisprudence and Probationer Decision Making:
A Social Cognitive Model
$641,614 ..... DOJ-NIJ

Wilson, Richard — **Plant Pathology**

*Molecular Mechanisms Integrating Fungal Growth
with Plant Innate Immunity Suppression
$599,999 ..... NSF

IOS: Molecular Mechanisms Connecting Plant Defense Suppression
with *Magnaporthe oryzae* Growth in Rice Cells
$570,000 ..... NSF

Witte, Amanda — **Nebraska Center for Research on Children, Youth, Families and Schools**

Nebraska Multi-Tiered System of
Support Implementation Support Team
$724,286 ..... ED through Nebraska Department of Education

Witt-Swanson, Lindsey — **Sociology/ Bureau of Sociological Research**

Behavioral Risk Factor Surveillance Survey and Adult Tobacco Survey
$682,361 ..... DHHS-CDC through
Nebraska Department of Health and Human Services
Gohring, Nicole ..... Bureau of Sociological Research

2018-2019 Student Health
and Risk Prevention Surveillance System
$281,322 ..... DHHS-CDC through
Nebraska Department of Health and Human Services

Wood, Charles — **Biological Sciences/Biochemistry/ Nebraska Center for Virology**

Comparative Virology Research Training Program
$841,402 ..... NIH-NIAID
Van Etten, James ..... Plant Pathology

Wortman, Samuel — **Agronomy and Horticulture**

Leveraging Management to Speed Degradation
of Bio-based Mulches in Soil
$499,718 ..... USDA-NIFA
Drijber, Rhae ..... Agronomy and Horticulture

Wragge, Annette — **Special Education and Communication Disorders**

Nebraska Autism Spectrum Disorders Network,
State Coordinator Project
$337,995 ..... ED through Nebraska Department of Education

Wu-Smart, Judy — **Entomology**

*Great Plains Regional Training for Beginning Beekeeping Farmers
$393,332 ..... USDA-NIFA

Xiang, Shi-Hua — **Veterinary Medicine and Biomedical Sciences/ Nebraska Center for Virology**

Mucosal Delivery and Retention of
Ebola Inhibitor Scytovirin Using *Lactobacillus*
$452,514 ..... NIH-NIAID

Xu, Changmou — **Food Science and Technology**

Improving Aronia Berry Sustainability and Fruit Quality
$461,983 ..... USDA-AMS through
Nebraska Department of Agriculture
Xu, Zheng ..... Statistics
Zhang, Yue ..... Food Science and Technology

Xu, Lisong — **Computer Science and Engineering**

NeTS: Small: Exploring the Design Space of Bandwidth
Estimation Methods Using Packet Sequence Information
$498,878 ..... NSF

NeTS: Small: Systematically and Scalably Testing
Network Programs under Packet Dynamics
$499,810 ..... NSF

Xu, Xiaoshan — **Physics and Astronomy/ Nebraska Center for Materials and Nanoscience**

*Microstructure and Strain Effects on Ferroelectric
and Transport Properties of HfO2-based Thin Films
$519,740 ..... NSF
Gruverman, Alexei ..... Physics and Astronomy/
Nebraska Center for Materials and Nanoscience
Tsymbal, Evgeny ..... Physics and Astronomy/
Nebraska Center for Materials and Nanoscience

Yan, Qiben — **Computer Science and Engineering**

*SaTC: CORE: Small: URadio: Towards Secure Smart Home IoT Communication Using Hybrid Ultrasonic-RF Radio

$499,999 ..... NSF

Zhou, Qin ..... Mechanical & Materials Engineering

Yang, Jinliang — **Agronomy and Horticulture**

*Rescuing the Fixed Deleterious Alleles for Genome-Enabled Micronutrients Improvement in Maize

$500,000 ..... USDA-NIFA

Waters, Brian ..... Agronomy and Horticulture

Yang, Ruiguo — **Mechanical & Materials Engineering**

*Cell-Cell Adhesion Mechanics and Mechanotransduction at the Single Cell Level

$439,584 ..... NSF

Lim, Jung Yul ..... Mechanical & Materials Engineering

Yates, Dustin — **Animal Science**

*Recovering Performance and Quality in IUGR-born Low-birthweight Livestock

$500,000 ..... USDA-NIFA

Petersen, Jessica ..... Animal Science

Yoder, Aaron — **Biological Systems Engineering**

Nebraska AgrAbility

$729,000 ..... USDA-NIFA

Frecks, Nancy ..... West Central Research and Extension Center

Harris-Broomfield, Susan ..... West Central Research and Extension Center

Riley, Mark ..... Biological Systems Engineering

Yu, Bin — **Biological Sciences/ Center for Plant Science Innovation**

*Understand the Functional Mechanism of the DSP1 Complex in the 3' Maturation of Plant Small Nuclear RNAs

$682,608 ..... NSF

Zhang, Chi ..... Biological Sciences/ Center for Plant Science Innovation

Yu, Hongfeng — **Computer Science and Engineering**

EarthCube IA: Optimal Data Layout for Scalable Geophysical Analysis in a Data-Intensive Environment

$332,941 ..... NSF

CGV: Small: A Scalable Visual Analytics Framework for Exascale Scientific Simulations

$405,378 ..... NSF

Yuen, Gary — **Plant Pathology**

Genetics and Genomics of Pathogen Resistance in Switchgrass

$297,152 ..... USDA-ARS through DOE

Yuill, David — **Durham School of Architectural Engineering and Construction**

*A Field Study to Characterize Fault Prevalence in Residential Comfort Systems

$749,792 ..... DOE

Zempleni, Janos — **Nutrition and Health Sciences/ Nebraska Center for the Prevention of Obesity-Related Diseases**

*Nutritive Value and Potential Health Benefits of LOL-Exosomes

$257,886 ..... Purina Mills

Adamec, Jiri ..... Biochemistry/Nebraska Center for the Prevention of Obesity-Related Diseases

Cui, Juan ..... Computer Science and Engineering/ Nebraska Center for the Prevention of Obesity-Related Diseases

Roles of Milk-Borne MicroRNAs in the Regulation of Gut Inflammation

$499,812 ..... USDA-NIFA

Ramer-Tait, Amanda ..... Food Science and Technology

Zeng, Lirong — **Plant Pathology**

Role of Organelle-localized Lys63-linked Ubiquitination in Plant Immunity

$685,000 ..... NSF

Zeng, Xiao — **Chemistry**

*Exploration of Low-Dimensional Gas Clathrate Hydrates

$256,188 ..... NSF

Cheung, Chin Li (Barry) ..... Chemistry

Zhu, Jinying — **Civil Engineering**

Online Monitoring System for Concrete Structures Affected by Alkali-Silica Reaction (ASR)

$800,000 . . . . . DOE

Zuhlke, Craig — **Electrical and Computer Engineering**

Fundamental Studies on Functionalizing Metallic Surfaces with Applications to Enhanced Heat Transfer and Drag Reduction; Novel Power Sources

$763,265 . . . . . DoD-Offutt Air Force Base-STRATCOM through National Strategic Research Institute

Alexander, Dennis. . . . . Electrical and Computer Engineering
Gogos, George . . . . . Mechanical & Materials Engineering
Ianno, Natale . . . . . Electrical and Computer Engineering
Shield, Jeffrey . . . . . Mechanical & Materials Engineering

Early Career Awards

Active awards, July 1, 2018–June 30, 2019
* Indicates new in 2018–2019

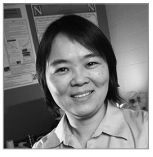
NSF CAREER Grants

National Science Foundation CAREER grants are awarded only to untenured junior faculty. These grants recognize research and education "of the highest quality and in the broadest sense." CAREER grants are unique in requiring a four- to five-year plan for the scientist's development as both a researcher and an educator.

Bartelt-Hunt, Shannon
Civil Engineering
CAREER: The Influence of Soil Attachment on the Biologic Activity of Extracellular Proteins
$413,883 . . . . . NSF

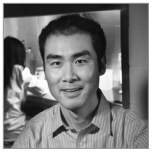
Dishari, Shudipto
Chemical and Biomolecular Engineering
CAREER: Confined Ionomeric Systems and Imaging of Ionic Distribution
$591,000 . . . . . NSF

Duncan, Brittany
Computer Science and Engineering
CAREER: Drones in Public: Foundational Interaction Research
$549,951 . . . . . NSF



Gu, Linxia
Mechanical & Materials Engineering
CAREER: Bridging Cellular-Level Changes to Vascular Tissue Response to Reveal Basic Mechanisms of Restenosis
$457,308 . . . . . NSF

Guo, Jiantao
Chemistry
CAREER: Quadruplet Codon Decoding: Mechanistic Studies and Application in Cellular Genetic Code Expansion
$622,320 . . . . . NSF



Li, Xu
Civil Engineering
CAREER: Effects of Nutrients on Antimicrobial Resistance and Subsistence
$400,000 . . . . . NSF

Libault, Marc
Agronomy and Horticulture/Center for Plant Science Innovation
*CAREER: Exploring the Transcriptional Regulatory Networks Controlling the Early Stages of Legume Nodulation
$573,573 . . . . . NSF

Lim, Jung Yul
Mechanical & Materials Engineering
CAREER: Adipocytic Mechanotransduction for Obesity
$430,554 . . . . . NSF

Louis, Joe
Entomology
*CAREER: Deciphering Sorghum Resistance Mechanisms to Phloem-Feeding Aphids
$1,513,415 . . . . . NSF

Males, Lorraine
Teaching, Learning and Teacher Education
CAREER: Examining Prospective Secondary Mathematics Teachers Learning to Use Curriculum Materials to Plan and Enact Instruction
$628,995 . . . . . NSF

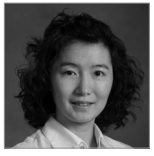
Montooth, Kristi
Biological Sciences
CAREER: The Physiology and Genetics of Adaptation in a Complex Environment
$683,365 . . . . . NSF

Morin, Stephen
Chemistry/Nebraska Center for Materials and Nanoscience
CAREER: Morphological Control of Crystalline Materials Using Deformations of Elastomeric Substrates and Fluid Flow for the Bottom-up Fabrication of Hybrid Materials
$649,474 . . . . . NSF

Neta, Maital
Psychology
CAREER: Functional Brain Networks Mediating Positivity Bias in Healthy Aging
$756,711 . . . . . NSF

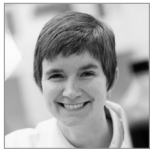
Obata, Toshihiro
Biochemistry/Center for Plant Science Innovation
*CAREER: Establishing the Roles of Multi-Enzyme Complexes in Metabolic Network Regulation
$746,955 . . . . . NSF

Pannier, Angela
Biological Sciences
CAREER: Nanostructured Thin Films for Substrate-Mediated Gene Delivery
$419,051 . . . . . NSF



Qu, Liyan
Electrical and Computer Engineering
CAREER: Adjustable-Voltage-Ratio Magnetoelectric Transformer: A New Voltage Conversion and Control Device for Smart Grids
$500,000 . . . . . NSF

Rao, Prahalada
Mechanical & Materials Engineering
CAREER: Smart Additive Manufacturing
$543,836 . . . . . NSF



Roston, Rebecca
Biochemistry/Center for Plant Science Innovation
*CAREER: How SFR2 Allows Chloroplast Envelope Membranes to Survive Freezing, from Initial Signal to Molecular Mechanism
$846,076.00 . . . . . NSF

Sealy, Michael
Mechanical & Materials Engineering
*CAREER: Hierarchical Structure Integrity of Magnesium Alloys via Asynchronous Laser and Additive Processing
$500,000 . . . . . NSF

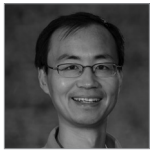
Shizuka, Dai
Biological Sciences
CAREER: Structure and Resilience of Social Networks under Population Turnover
$681,870 . . . . . NSF

Sinitskii, Alexander
Chemistry
CAREER: Narrow Graphene Nanoribbons with Tunable Electronic Properties
$538,477 . . . . . NSF

Stains, Marilyne
Chemistry/Center for Science, Mathematics and Computer Education
CAREER: The Winding Roads to Effective Teaching: Characterizing the Progressions in Instructional Knowledge and Practices of STEM Faculty
$959,849 . . . . . NSF

Wachs, Rebecca
Biological Systems Engineering
*CAREER: Alternative Non-Opioid Therapies for Low Back Pain
$510,389 . . . . . NSF

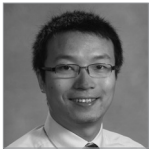
Wei, Sheng
Computer Science and Engineering
CAREER: Towards the Security of Heterogeneous CPU-FPGA Systems
$496,940 . . . . . NSF



Xu, Xiaoshan
Physics and Astronomy
CAREER: Hexagonal Ferrite Thin Films for the High-Temperature Magnetoelectric Memory Effect
$591,256 . . . . . NSF

Yin, Yanbin
Nebraska Food for Health Center
*CAREER: Evolutionary Genomics of Enzymes for Complex Carbohydrate Metabolism
$353,179 . . . . . NSF

Yu, Hongfeng
Computer Science and Engineering
CAREER: Scalable Techniques for Visualizing Very Large Graphs
$476,951 . . . . . .NSF



Zhang, Jian
Chemistry
CAREER: Tuning Photoredox Properties of Carbazolic Porous Organic Frameworks for Visible-Light-Mediated Catalysis
$527,154 . . . . . .NSF

Zhang, Limei
Biochemistry/Nebraska Center for Redox Biology/Nebraska Center for Integrated Biomolecular Communication
*CAREER: Structural and Mechanistic Studies on an Iron-Sulfur Cluster-based Nitric Oxide Sensor
$600,000 . . . . . .NSF

Air Force Young Investigator Program

YIP awards support scientists and engineers who have received Ph.D. or equivalent degrees in the last five years and show exceptional ability and promise for conducting basic research.

Fuchs, Matthias
Physics and Astronomy
YIP: Next-Generation X-Ray Lightsource and First Applications
$369,422 . . . . . .DoD-AFOSR

Department of Energy Early Career Research Program

DOE's Early Career Research Program supports the development of individual research programs of outstanding scientists early in their careers and stimulates research careers in the disciplines supported by the DOE Office of Science.

Kovalev, Alexey
Physics and Astronomy
Non-Collinear Magnetism and Dynamic Effects in Dzyaloshinskii-Moriya Magnets
$750,000 . . . . . DOE

Office of Naval Research Young Investigator Program

The Office of Naval Research Young Investigator Program supports academic scientists and engineers who are in their first or second full-time tenure-track academic appointment and who show exceptional promise for doing creative research.

Argyropoulos, Christos
Electrical and Computer Engineering
*YIP: Theoretically Modeling the High Thermal Emission/Formation Dynamics of Femtosecond Laser Functionalized Surfaces to Optimize Surfaces
$749,910 . . . . . DoD-ONR

Arts and Humanities Awards $250,000 or More

Active awards, July 1, 2018–June 30, 2019

* Indicates new in 2018–2019

Cohen, Matt

English/Center for Digital Research in the Humanities

*Charles Chesnutt: A Digital Archive

$292,627 ..... NEH

5/1/19 – 4/30/21

Price, Kenneth ..... English/Center for Digital Research in the Humanities

Through a grant from the National Endowment for the Humanities, the existing Charles Chesnutt Digital Archive will be redesigned, and more works by the African-American author will be added. The project, a collaboration between Nebraska and The New School in New York City, is directed at Nebraska by Matt Cohen, professor of English, and Kenneth M. Price, Hillegass University Professor of Literature and co-director of CDRH. The project is edited by Stephanie Browner of The New School. Chesnutt is a major figure in American literary studies and was a profound thinker about race and justice in the United States. He wrote six book-length works, more than 80 stories, and many essays and speeches during his career.

Heitman, Carolyn

Anthropology/Center for Digital Research in the Humanities

Salmon Pueblo Archaeological Research Collection

$300,000 ..... NEH

5/1/15 – 10/31/18

Walter, Katherine .....Center for Digital Research in the Humanities

With a $300,000 National Endowment for the Humanities grant, anthropologist Carrie Heitman is part of a team of researchers who are digitizing about 1.5 million photographs, field notes and other records generated during 1970s and 1980s excavations of the 1,000-year-old Salmon Pueblo in northwestern New Mexico. The Chaco Research Archive, which Heitman directs, will house the digitized records. Digital access will allow researchers to explore more fully this historically and culturally significant community. Collaborators are the Salmon Ruins Museum, Archaeology Southwest, Nebraska's Center for Digital Research in the Humanities and the University of Virginia's Institute for Advanced Technology in the Humanities, home to the Chaco Research Archive.

Jacobs, Margaret

History/Center for Digital Research in the Humanities

*Genoa Indian School Digital Reconciliation Project

$349,899 ..... NEH

6/1/19 – 5/30/22

Lorang, Elizabeth ..... University Libraries/Center for Digital Research in the Humanities

Genoa Indian School Digital Reconciliation Project

$290,123 ..... Council on Library and Information Resources

6/1/18 – 5/31/20

Lorang, Elizabeth .....Center for Digital Research in the Humanities

With funding from the National Endowment for the Humanities and the Council on Library and Information Resources, Margaret Jacobs, professor of history and director of the Women's and Gender Studies program, and Elizabeth Lorang, associate professor of University Libraries, are compiling, digitizing and making accessible records and other materials from the Genoa Indian Industrial School in Nebraska, one of more than 150 boarding schools designed to assimilate indigenous American people into Euro-American culture near the end of the 19th century. They are working closely with Nancy Carlson and the Genoa U.S. Indian School Foundation in Genoa. The university's Center for Digital Research in the Humanities hosts the Genoa Indian School Digital Reconciliation Project. In order to move the project forward with sensitivity and respect, Jacobs and Lorang are working with an advisory council that includes representatives from the Ponca, Pawnee, Omaha and Winnebago nations and UNITE, the university's Native American student group.

Jewell, Andrew — Center for Digital Research in the Humanities

Complete Letters of Willa Cather: Stage 2

$278,000 ..... NEH
1/1/19 – 12/31/21
Homestead, Melissa ..... English/Center for Digital Research in the Humanities

The National Endowment for the Humanities is supporting the work of Andrew Jewell, professor of University Libraries in the Center for Digital Research in the Humanities, to digitally publish the complete correspondence of Willa Cather on the open-access Willa Cather Archive (cather.unl.edu). Publication on the archive will allow interoperation of the edition with other Cather documents (photographs, texts, published scholarship and archival materials) and wide accessibility as data for humanities scholars doing various kinds of research. When finished, *The Complete Letters of Willa Cather* will bring unprecedented access to the revealing personal voice of one of the most important figures in American literary history and will dramatically expand the body of Cather materials available to scholars, teachers, students and general readers.

Kooser, Ted — English

American Life in Poetry Project

$491,885 ..... Poetry Foundation
1/1/05 – 12/31/19

The Poetry Foundation, in partnership with the Library of Congress, supports the American Life in Poetry Project, an initiative of Ted Kooser, the 2004-2006 Poet Laureate Consultant in Poetry to the Library of Congress. American Life in Poetry is a free weekly column for newspapers and online publications featuring a poem written by a contemporary American poet, chosen by Kooser, with a brief introduction written by Kooser. The sole mission of this project is to promote poetry. The Poetry Foundation funds the project, with administrative support provided by the English department, where the project office is located.

Lorang, Elizabeth — Center for Digital Research in the Humanities

Extending Image Analysis for Archival Discovery (Aida)

$462,317 ..... IMLS
12/1/16 – 11/30/19
Soh, Leen-Kiat ..... Computer Science and Engineering

The Image Analysis for Archival Discovery (Aida) research team investigates the use of image analysis to identify, describe and retrieve information from digital libraries and other digitized collections. Using machine learning, Elizabeth Lorang, associate professor of University Libraries, and colleagues in the Center for Digital Research in the Humanities are building an intelligent computational system that can recognize visual cues in digital images and identify similar content in new images. Digital images created by libraries, archives, museums and other groups represent a largely underutilized digitized cultural record – particularly digital images of textual materials. One goal of the project is to develop a new digital collection using the extracted content.

Price, Kenneth — English/Center for Digital Research in the Humanities

Unearthing the "Buried Masterpiece" of American Literature: A Digital Variorum of the 1855 *Leaves of Grass*

$300,000 ..... NEH
7/1/17 – 6/30/20

Kenneth Price, Hillegass University Professor of English and co-director of the Center for Digital Research in the Humanities, directs the Walt Whitman Archive, a digital archive that makes Whitman's vast work easily and conveniently accessible to scholars, students, and general readers alike. With support from the National Endowment for the Humanities, the first edition of *Leaves of Grass*, along with the constellation of draft documents that contributed to it, has been developed into a digital variorum from manuscript and notebook beginnings through its many variations in print. The goal of the project is to advance understanding of this paradigm-shifting book and to enable future scholarship by drawing on some of the opportunities for representation unique to digital editing.

Shear, Donna — **University of Nebraska Press**

Recovering Languages and Literacies of the Americas: A Collaborative Initiative

$781,900 ..... Andrew W. Mellon Foundation

1/3/11 – 12/31/21

This $781,900 grant from the Andrew W. Mellon Foundation gives the University of Nebraska Press, along with the University of Oklahoma Press and the University of Texas Press, resources to help linguistic scholars publish indigenous language grammars and dictionaries, literacy studies, ethnographies and other linguistic monographs. Twenty-seven books – nine from each press – will be published on the grammar and literacy of endangered languages. The initiative also aims to generate broader interest in linguistic monographs and to find more efficient, cost-effective ways to produce monographs. These publications are important resources for academics in the fields of linguistics, indigenous studies and social sciences, and to communities wishing to preserve their language and culture, said Donna Shear, University of Nebraska Press director, who is leading this collaboration.

Walter, Katherine — **University Libraries/Center for Digital Research in the Humanities**

National Digital Newspaper Program: Nebraska

$981,012 ..... NEH

9/1/07 – 8/31/20

Mering, Margaret ..... University Libraries

The Nebraska Digital Newspaper Project selects, digitizes and provides access to historically significant Nebraska newspapers, as well as ethnic titles, representing geographic, political, and social breadth. These titles will be accessible through Chronicling America at the Library of Congress and through Nebraska Newspapers, our state newspaper site.

Arts and Humanities Awards
$50,000 to $249,999

Active awards, July 1, 2018–June 30, 2019

* Indicates new in 2018–2019

Barker, Bradley — **Extension**

Library Innovation Studios: Transforming Rural Communities

$236,771 ..... IMLS through Nebraska Library Commission

Boeckner, Linda ..... Extension

Farritor, Shane ..... Mechanical & Materials Engineering

Hancock, Connie ..... Panhandle Research and Extension Center

Narjes, Charlotte ..... Agricultural Economics

Cohen, Matt — **English/Center for Digital Research in the Humanities**

Walt Whitman's Annotations

$125,961 ..... NEH

Gray, Nicole ..... English/Center for Digital Research in the Humanities

Dawes, Kwame — **English**

African Poetry Digital Project

$150,000 ..... Ford Foundation

Dawes, Lorna ..... University Libraries

Edwards, Richard — **Center for Great Plains Studies**

African American Homesteaders Historic Resource Study

$168,274 ..... DOI-NPS

Hoff, Michael — **Art, Art History and Design**

Antiochia ad Cragum Excavations: 2019 Season

$52,800 ..... Merops Foundation

Homestead, Melissa — **English**

*The Creative Partnership of Willa Cather and Edith Lewis

$50,400. ..... NEH

Jockers, Matthew — **English/Center for Digital Research in the Humanities**

Text Mining the Novel:
Establishing the Foundations of a New Discipline

$88,233 ..... Government of Canada-SSHRC through McGill University

Jones, Jeannette — **Institute for Ethnic Studies/History/Center for Digital Research in the Humanities**

*To Enter Africa from America:
The United States, Africa and the New Imperialism, 1862-1919

$216,106 ..... NEH

Richards-Rissetto, Heather — **Anthropology/Center for Digital Research in the Humanities**

Keeping Data Alive: Supporting Reuse and Repurposing of 3D Data in the Humanities

$74,368 ..... NEH

Walter, Katherine ..... Center for Digital Research in the Humanities

Walter, Katherine — **Center for Digital Research in the Humanities**

From Prairie to Palace: Buffalo Bill's Wild West in Europe

$52,711 ..... NEH through Buffalo Bill Center of the West

Arts and Humanities Awards
$5,000 to $49,999

Active awards, July 1, 2018–June 30, 2019

* Indicates new in 2018–2019

Dombrowski, Kirk — **Sociology**

Looking Past Skin: Nebraska Immigration Today and Yesterday

$6,500 . . . . . Humanities Nebraska

Matthews, Kim . . . . . Sociology

James, Michael — **Textiles, Merchandising and Fashion Design**

Robert Hillestad Textiles Gallery

$10,000 . . . . . Pearle Francis Finigan Foundation

Jewell, Andrew — **Center for Digital Research in the Humanities**

My Ántonia at 100: The Ongoing Story

$6,930 . . . . . Humanities Nebraska

Rau, Emily . . . . . Center for Digital Research in the Humanities

Jones, Patrick — **History**

The Classroom and the Future of the Historical Record: Humanities Education in a Changing Climate for Knowledge Production

$41,906 . . . . . Andrew W. Mellon Foundation through University of Illinois

Johnson, Aaron . . . . . Teaching, Learning and Teacher Education

Thomas, William . . . . . History

Nicholas, Claire — **Textiles, Merchandising and Fashion Design**

Crafting Culture in the Middle of Everywhere: An Arts-Based Project on Intercultural Empathy Building and Entrepreneurship

$9,561 . . . . . Pearle Francis Finigan Foundation

Kim, Surin . . . . . Textiles, Merchandising and Fashion Design

Poor, Erin — **Lied Center for Performing Arts**

Dance & Dialogue: Expanding Cultural Understanding through Hip Hop

$20,000 . . . . . NEA

Engen-Wedin, Nancy . . . . . Lied Center for Performing Arts

Price, Kenneth — **English/Center for Digital Research in the Humanities**

Fame and Infamy: Walt Whitman's Old-Age Correspondence

$44,181 . . . . . National Historical Publications and Records Commission through University of Iowa

Shank, Nancy — **Public Policy Center**

Lincoln Reads Aloud: A Collective Impact Model

$15,666 . . . . . Institute of Museum and Library Services through Lincoln Community Foundation

Shear, Donna — **University of Nebraska Press**

Early American Regions

$30,100 . . . . . University of Georgia

Yang, Shuling — **Teaching, Learning and Teacher Education**

Coaching Preschool Teachers to Ask Higher-Level Questions in Dialogic Reading

$5,000 . . . . . International Literacy Association

NUtech VENTURES®

Pioneering Partnerships for Innovation

NUtech Ventures' mission is to facilitate the commercialization and practical use of innovations generated through the research activities at the University of Nebraska–Lincoln. We do this by identifying, evaluating, protecting, marketing and licensing the university's intellectual property to promote economic development and improve the quality of life.

Patents Issued in 2018-2019

Recognition for faculty and other university personnel who received patents for their inventions
July 1, 2018–June 30, 2019

Dennis R. Alexander, Troy P. Anderson, Craig Zuhlke, Sidy Ndao, George Gogos

Electrical and Computer Engineering; Mechanical & Materials Engineering
Title: Monolithic Heat-transfer Device
Date: 4/23/2019
Number: 10267567
Country: United States

Mark A. Borden, Benjamin S. Terry

Mechanical & Materials Engineering
Title: System and Methods for Ventilation through a Body Cavity
Date: 11/13/2018
Number: 10124126
Country: United States

Judith M. Burnfield, Carl A. Nelson, Cale Stolle

Mechanical & Materials Engineering
Title: Biomechanical Foot Guidance Linkage
Date: 4/9/2019
Number: 10252100
Country: United States

Edgar B. Cahoon, Umidjon Iskandarov, Hae Jin Kim, Jillian Collins-Silva

Biochemistry
Title: Novel Acyltransferases and Methods of Using
Date: 5/7/2019
Number: 10280431
Country: United States

Thomas E. Clemente, Edgar B. Cahoon, Hyunwoo Park, Hanh Nguyen

Biochemistry; Agronomy and Horticulture
Title: Method for the Production of High Saturated, Low Polyunsaturated Soybean Oil
Date: 10/16/2018
Number: 10100325
Country: United States

Stephen G. DiMagno, Bao Hu

Chemistry
Title: Radioiodinated Compounds
Date: 8/21/2018
Number: 10053423
Country: United States

Date: 3/13/2019
Number: 3089962
Countries: France, Netherlands, Italy, Spain, United Kingdom, Germany, Belgium

Stephen G. DiMagno, Bao Hu

Chemistry
Title: Guanidinium Compounds
Date: 10/30/2018
Number: 10112893
Country: United States

Shane M. Farritor, Dmitry Oleynikov, Ryan L. McCormick, Tyler Wortman, Eric Markvicka
Mechanical & Materials Engineering; Surgery (UNMC)
Title: Robotic Surgical Devices, Systems and Related Methods
Date: 10/30/2018
Number: 10111711
Country: United States

Thomas Frederick, Shane M. Farritor, Eric Markvicka, Joe Bartels, Jack Mondry
Mechanical & Materials Engineering
Title: Single Site Robotic Device and Related Systems and Methods
Date: 3/5/2019
Number: 10219870
Country: United States

Craig Herzinger, John A Woollam, Mathias Schubert, Tino Hoffman, Sean Knight, Gregory K. Pribil
Electrical and Computer Engineering
Title: Integrated Vacuum-Ultraviolet Mid, and Near-Ultraviolet, Visible, Near, Mid and Far Infrared and Terahertz Optical Hall Effect (OHE) Instrument, and Method of Use
Date: 9/11/2018
Number: 10073120
Country: United States

Andrea Holmes, Mathias Schubert, Patrick H. Dussault, Tino Hofmann, Daniel Schmidt, Rebecca Y. Lai
Electrical and Computer Engineering; Chemistry
Title: Optical Sensing and Separation Based on Ordered Three-dimensional Nanostructured Surfaces
Date: 1/29/2019
Number: 10190978
Country: United States

Jinsong Huang, Yuchuan Shao, Qingfeng Dong
Mechanical & Materials Engineering
Title: Systems and Methods for Scalable Perovskite Device Fabrication
Date: 1/29/2019
Number: 10193092
Country: United States

Jinsong Huang
Mechanical & Materials Engineering
Title: Self-powered GHZ Solution-processed Hybrid Perovskite Photodetectors
Date: 2/5/2019
Number: 10199579
Country: United States

William Laegreid, Hiep Vu, Asit Pattnaik, Fernando A. Osorio, Fangrui Ma
Veterinary and Biomedical Sciences; Biological Sciences
Title: A Non-naturally Occuring Porcine Reproductive and Respiratory Syndrome Virus (PRRSV) and Methods of Using
Date: 9/11/2018
Number: 10072046
Country: United States

Date: 5/7/2019
Number: 2687150
Country: Russia

Date: 6/14/2019
Number: 6538071
Country: Japan

Hao Luo, Hong Jiang, Lei Tian
Computer Science
Title: Enforcing Persistency for Battery-Backed Mobile Devices
Date: 4/30/2019
Number: 10275164
Country: United States

Yongfeng Lu, Yunshen Zhou, Hossein Rabiee Golgir
Electrical and Computer Engineering
Title: Growth of Nitride Films
Date: 3/19/2019
Number: 10233544
Country: United States

Sally Mackenzie, Yingzhi Xu
Agronomy and Horticulture; Center for Plant Science Innovation
Title: Methods and Compositions for Obtaining Useful Plant Traits
Date: 8/28/2018
Number: 10058044
Country: United States

Sally Mackenzie, Roberto De la Rosa Santamaria
Agronomy and Horticulture; Center for Plant Science Innovation
Title: Plants with Useful Traits and Related Methods
Date: 4/10/2019
Number: 2704554
Countries: United Kingdom, Turkey, Spain, Netherlands, Italy, Germany, France, Belgium

Andrew Marshall, Peter A. Dowben, Nishtha Sharma
Physics and Astronomy
Title: Unipolar Magnetoelectric Magnetic Tunnel Junction
Date: 1/8/2019
Number: 10177303
Country: United States

Kenneth Narva, Kanika Arora, Sarah Worden, Blair Siegfried, Chitvan Khajuria, Ana Maria Velez, Ronda Hamm, Meghan Frey, Nick Storer, Elane Fishilevich
Entomology
Title: Parental RNAi Suppression of Kruppel Gene to Control Hemipteran Pests
Date: 8/14/2018
Number: 10047374
Country: United States

Title: Parental RNAi Suppression of Hunchback Gene to Control Hemipteran Pests
Date: 8/14/2018
Number: 10047360
Country: United States

Title: Parental RNAi Suppression of Chromatin Remodeling Genes to Control Coleopteran Pests
Date: 8/21/2018
Number: 10053706
Country: United States

Sidy Ndao, Mahmoud Elzouka
Mechanical & Materials Engineering
Title: Near-field Heat Transfer Enabled Nanothermomechanical Memory and Logic Devices
Date: 7/10/2018
Number: 10020010
Country: United States

Carl A. Nelson, Alan Goyzueta
Mechanical & Materials Engineering
Title: Compliant Surgical Graspers and Methods of Making and Using
Date: 4/9/2019
Number: 10251659
Country: United States

Wei Niu, Jiantao Guo, Qingsheng Li, Yue Li, Nanxi Wang
Biological Sciences; Chemistry
Title: Live, Attenuated Vaccines and Methods of Making and Using
Date: 6/18/2019
Number: 10322172
Country: United States

Wei Qiao, Liyan Qu, Ze Wang
Electrical and Computer Engineering
Title: Monitoring Aging of Power Semiconductor Devices Based on Case Temperature
Date: 5/14/2019
Number: 10288672
Country: United States

Wei Qiao, Taesic Kim, Liyan Qu
Electrical and Computer Engineering
Title: Rechargeable Multi-cell Battery
Date: 5/21/2019
Number: 10297855
Country: United States

Alexander Sinitskii, Alexey Lipatov, Alexei Gruverman
Chemistry; Physics and Astronomy
Title: Memory Device Based on Heterostructures of Ferroelectric and Two-dimensional Matter
Date: 12/25/2018
Number: 10163932
Country: United States

Alexander Sinitskii, Jody G. Redepenning, Benjamin Wymore
Chemistry
Title: Polymer on Graphene
Date: 1/29/2019
Number: 10192971
Country: United States

Oleg Tchernyshyov, Alexey Kovalev, Kirill Belashchenko
Physics and Astronomy
Title: Magnetoelectric Memory Cells with Domain Wall-mediated Switching
Date: 10/2/2018
Number: 10090034
Country: United States

Benjamin S. Terry, Weston Lewis, Wanchuan Xie, Pengbo Li, Alfred Tsubaki
Mechanical & Materials Engineering
Title: Gastrointestinal Sensor Implantation System
Date: 3/5/2019
Number: 10219748
Country: United States

Christopher Y. Tuan, Lim Nguyen
Civil Engineering; Electrical and Computer Engineering
Title: Concrete Mix for Shotcrete Applications for Electromagnetic Shielding
Date: 7/24/2018
Number: 10034418
Country: United States

Title: Electrically Conductive Concrete Mix for Electromagnetic (Em) Ground Plane
Date: 4/9/2019
Number: 10256006
Country: United States

Harkamal Walia, Dante Placido, Thomas E. Clemente
Agronomy and Horticulture
Title: Sequences Involved in Plant Yield And Methods of Using
Date: 7/31/2018
Number: 10036034
Country: United States

Haosen Wang, Wei Qiao, Liyan Qu
Electrical and Computer Engineering
Title: Electromagnetic Power Converter
Date: 5/14/2019
Number: 10290417
Country: United States

Donald Weeks, Thomas E. Clemente, Paul C.C. Feng, Stanislaw Flasinski, Razvan Dumitru
Biochemistry; Agronomy and Horticulture
Title: Improved Production and Yield Capacity of Transgenic Plants Expressing a Genetically Engineered Version of the Dicamba Monooxygenase Gene (aka, oxygenaseDIC)
Date: 9/10/2018
Number: 300876
Country: India

2018-2019 License Agreements

Recognition for faculty whose technologies formed the basis of licensing agreements with industry partners
July 1, 2018–June 30, 2019

Gary Anderson, Clayton Kelling
Veterinary and Biomedical Sciences
Technology: Cell Line

David Andrews
Agronomy and Horticulture
Technology: Purple Plant Colorant

P. Stephen Baenziger, Mitchell Montgomery, Rich Little, Greg Dorn
Agronomy and Horticulture
Technology: Barley Variety
Technology: Triticale Variety (2 licenses)

P. Stephen Baenziger, Mitchell Montgomery, Greg Dorn
Agronomy and Horticulture
Technology: Triticale Variety

P. Stephen Baenziger, Del Dovel, Ben Moreno-Sevilla
Agronomy and Horticulture
Technology: Triticale Variety

Mark Behrens, Xiao-Zhou Wang, Nedim Mutlu, Patricia Herman, Thomas Clemente, Donald Weeks
Biochemistry; Biological Sciences; Agronomy and Horticulture
Technology: Dicamba Use in Canola

Carrick Detweiler, Ashraful Islam, Adam Houston, Ajay Shankar
Computer Science; Mechanical & Materials Engineering; Earth and Atmospheric Sciences; Computer Science and Engineering
Technology: Sensor Housing

Stephen DiMagno
Chemistry
Technology: Medical Imaging Agents

Achim Dobermann, Daniel T. Walters, Haishun Yang, Kenneth G. Cassman, Patricio Grassini
Agronomy and Horticulture
Technology: Hybrid Maize Software

Achim Dobermann, Daniel T. Walters, Haishun Yang, Kenneth G. Cassman, Tri Setiyono
Agronomy and Horticulture
Technology: Software

Achim Dobermann, Daniel T. Walters, Haishun Yang, Kenneth G. Cassman, Patricio Grassini
Agronomy and Horticulture
Technology: Hybrid Maize Software

Vadim N. Gladyshev
Biochemistry
Technology: Expression of Selenoproteins in Cells

George Graef
Agronomy and Horticulture
Technology: Soybean Varieties (4 licenses)

George Graef, Leslie Korte
Agronomy and Horticulture
Technology: Soybean Varieties

George Graef, Leslie Korte, Dennis White, Travis Wegner, James Specht
Agronomy and Horticulture
Technology: Soybean Varieties

George Graef, Leslie Korte, Dennis White, Travis Wegner, James Specht, Orlando Zapata, Rebecca Ott, Shawn Jenkins, Tyler Frederick, Aaron Hoagland
Agronomy and Horticulture
Technology: Soybean Varieties

Ashu Guru, Santosh Pitla, Dipti Dev
4-H Youth Development; Biological Systems Engineering; Child, Youth and Family Studies
Technology: NU Sensi-plate

Jinsong Huang, Qingfeng Dong, Yuchuan Shao
Mechanical & Materials Engineering
Technology: Solar Cell Technology

Sally Mackenzie, Robersy Sanchez Rodriguez
Agronomy and Horticulture
Technology: Plant Epigenetics

Patricia Jan Sollars, Gary Edward Pickard
Veterinary and Biomedical Sciences
Technology: Oncolytic Viruses for the Treatment and Prevention of Cancer

---

Stephen Taylor, Joseph Baumert
Food Science and Technology
Technology: Allergen Kits

Benjamin S. Terry
Mechanical & Materials Engineering
Technology: Extrapulmonary Ventilation

Christopher Y. Tuan, Lim Nguyen
Civil Engineering; Electrical and Computer Engineering
Technology: Conductive Concrete (2 licenses)

Jens Walter, Robert Hutkins, Thomas E. Burkey
Food Science and Technology; Animal Science
Technology: Prebiotics

Janos Zempleni
Nutrition and Health Sciences
Technology: Milk Exosome Technology

Creative Activity

Faculty who created, performed or produced works in the fine and performing arts and architecture, television and film, or digital/software design, nationally or internationally, July 1, 2018–June 30, 2019

Submitted by faculty, chairs/heads or deans

John Bailey — **Glenn Korff School of Music**

Conductor. International Flute Orchestra. Concert tour of Italy. Churches in Palermo, Sicily; Mosta, Malta; Rome, Italy.

Conductor. NFA Professional Flute Choir. Full concert. National Flute Association annual national convention, Orlando, FL.

Diane Barger — **Glenn Korff School of Music**

Performer, clarinet. "Études Concertantes." Featured recital. ClarinetFest®, International Clarinet Association, Knoxville, TN.

Jamie Bullins — **Johnny Carson School of Theatre and Film**

Scenic designer. "Jam." NET, Nebraska's PBS & NPR Stations, Lincoln, NE.

Costume designer. "Ghastly Dreadfuls." Center for Puppetry Arts, Atlanta, GA.

Scenic designer. "Invasion: Christmas Carol." Dad's Garage Theatre, Atlanta, GA.

Scenic designer. "A Christmas Carol." Theatre Buford, Buford, GA.

Scenic designer. "The Doll Maker's Gift." The Rose Theatre, Omaha, NE.

Scenic designer. "A Streetcar Named Desire." Theatre Buford, Buford, GA.

Wheeler Winston Dixon — **English/Film Studies**

Director. "Wheeler Winston Dixon: From Ancient History to A Hundred Years from Today." Career retrospective. LA Filmforum, the Spielberg Theatre at the Egyptian Cinema, Los Angeles, CA.

Director. "En Route," "Broken Bow," "210 Tests," "Melting Mona Lisa," "Ulysses on the Shore," "I Think I Dont Know." Invited screening. 5th Annual Atrabilious Experimental Film Festival, Filmhuis Cavia, Amsterdam, the Netherlands.

Director. "Wheeler Winston Dixon: Experimental Videos 2019." De Nijverheid Theatre, Utrecht, the Netherlands.

Eddie Dominguez — **Art, Art History and Design**

Artist, ceramics. "Garden of Eden." Solo exhibition. Columbus Museum of Art, Columbus, GA; Everson Museum of Art, Syracuse, NY.

Dana Fritz — **Art, Art History and Design**

Artist, photography. Selections from "Terraria Gigantica." Terraria Gigantica: The World under Glass. Solo exhibition. The Turchin Center for the Visual Arts, Boone, NC.

Artist, photography. Selections from "Terraria Gigantica." Land Use. Stephen Bulger Gallery, Toronto, Canada.

Artist, photography. Selections from "Terraria Gigantica" and "Views Removed." Kalee Appleton and Dana Fritz: New Landscapes. Shircliff Gallery of Art, Vincennes, IN.

Kevin Hanrahan — **Glenn Korff School of Music**

Vocal performer. "New Art Song of the Pacific Rim." CD recording. Wirripang Pty. Ltd., Sydney, Australia.

Nathan Koch — **Glenn Korff School of Music**

Performer, bassoon. "Sonata for Piano and Violin in A Major" (trans. Koch). Solo performance. Conference of the International Double Reed Society, University of South Florida, Tampa, FL.

Tom Larson — **Glenn Korff School of Music**

Composer, producer. "Focus." Digital recording. Recorded at Studio Dedé, Tokyo, Japan.

JD Madsen — **Johnny Carson School of Theatre and Film**

Scenic designer. "The Wedding Singer." Next Stop Theatre Company, Herndon, VA.

Scenic designer. "Legally Blonde." Catholic University of America, Washington, D.C.

Scenic designer. "Beauty and the Beast." Riverside Center for the Performing Arts, Fredericksburg, VA.

Scenic designer. "Grand Concourse." Prologue Theatre Company, Arlington, VA.

Scenic designer. "Into the Light: An Immersive Choral Experience." Washington Choral Arts Society, Washington, D.C.

Zachary Tate Porter — **Architecture**

Artist, architecture. "Topographic Survey of Two Sidewalk Holes." Digital drawing exhibition. Drawing for the Design Imaginary. Carnegie Museum of Art, Pittsburgh, PA.

Artist, architecture. "Topographic Survey of Two Sidewalk Holes." Drawing Attention: The Digital Culture of Contemporary Architectural Drawings. Roca Gallery, London, UK.

Guy Reynolds — **Cather Project, Program of Excellence/English**

Director, orchestra. "Prairie Songs: Remembering Ántonia." Lincoln Symphony Orchestra, Lincoln, NE.

Kaci Richter — **Visual Communications/Broadcasting**

Vocal narrator. "Terrorism, Betrayal, and Resilience: My Story of the 1998 U.S. Embassy Bombings" by Prudence Bushnell. Audiobook. Audible, Lincoln, NE.

Colleen Syron — **Art, Art History & Design**

Designer, poster. "Rural Addiction." Curated social justice poster exhibition. Good Apple Awards: For All of Us. Livestock Exchange Building, Omaha, NE.

William G. Thomas III — **History**

Developer, with the Center for Digital Research in the Humanities. "O Say Can You See: Early Washington, D.C., Law, and Family." Online database. University of Nebraska, Lincoln, NE.

Writer, co-producer. "Anna." Animated short film. BronzeLens Film Festival, Atlanta, GA; Virginia Film Festival, Charlottesville, VA; Utopia Film Festival, Greenbelt, MD; Hip Hop Film Festival, New York, NY; New Media Film Festival, Los Angeles, CA [Best Animation]; Hampton University Film Festival, Hampton, VA.

Sandra Williams — **Art, Art History and Design**

Artist, cut paper. "Wild Things: Nature and the Social Imagination." Exhibition. Len G. Everett Gallery, Monmouth College, Monmouth, IL.

Adrian Wisnicki — **English/Center for Digital Research in the Humanities**

Director, with J. Livingstone. "Livingstone's Missionary Travels Manuscript (1857) – A Critical Edition." Livingstone Online (https://www.livingstoneonline.org/).

Director, with J. McDonald. "Livingstone's Manuscripts in South Africa (1843–1872) – A Critical Edition." Livingstone Online (https://www.livingstoneonline.org/). University of Maryland Libraries, College Park, MD.

Director, with M. Ward. "Livingstone's 1870 Field Diary and Select 1870–1871 Manuscripts – A Multispectral Critical Edition." Livingstone Online (https://www.livingstoneonline.org/). University of Maryland Libraries, College Park, MD.

Books

Faculty who wrote or edited books published July 1, 2018–June 30, 2019
Submitted by faculty, chairs/heads or deans

Marco Abel — **English**
Editor, with Christina Gerhardt. *Celluloid Revolt: German Screen Cultures and the Long 1968.* Rochester, NY: Camden House.

Kristen M. Blankley — **Law**
Author, with Maureen A. Weston, Jill I. Gross, Stephen Huber. *Arbitration: Law, Policy, and Practice.* Durham, NC: Carolina Academic Press.

Dawn O. Braithwaite — **Communication Studies**
Author, with Kathleen Galvin, Paul Schrodt, Carma Bylund. *Family Communication: Cohesion and Change, 10th edition.* New York, NY: Routledge.

Eve M. Brank — **Center on Children, Families, and the Law/Psychology**
Author. *The Psychology of Family Law.* New York, NY: New York University.

Amy N. Burnett — **History**
Author. *Debating the Sacraments: Print and Authority in the Early Reformation.* New York, NY: Oxford University Press.

David Cahan — **History**
Author. *Hemholtz: A Life in Science.* Chicago, IL: University of Chicago Press.

Jennine Capó Crucet — **English**
Author. *My Time Among the Whites: Notes from an Unfinished Education.* New York, NY: Macmillan Publishers.

Terence J. Centner — **Agricultural Economics/Law**
Author. *Consumers, Meat and Animal Products: Policies, Regulations and Marketing.* Abingdon, UK: Routledge.

Rochelle Dalla — **Child, Youth and Family Studies**
Editor, with Donna Sabella. *Routledge International Handbook of Human Trafficking: A Muliti-Disciplinary and Applied Approach.* New York, NY: Routledge/Taylor & Francis.

Bedross Der Matossian — **History**
Editor, with Suleiman A. Mourad, Naomi Koltun-Fromm. *Routledge Handbook on Jerusalem.* New York, NY: Routledge.

Editor, with Barlow Der Mugrdechian. *Western Armenian in the 21st Century: Challenges and New Approaches.* Fresno, CA: The Press at California State University.

Wheeler Winston Dixon — **English/Film Studies**
Author. *Synthetic Cinema: The 21st Century Movie Machine.* New York, NY: Palgrave Macmillan.

Iker González-Allende — **Modern Languages and Literatures**
Author. *Hombres en Movimiento: Masculinidades Españolas en los Exilios y Emigraciones, 1939-1999 (Men in Motion: Spanish Masculinities in Exiles and Migrations, 1939-1999).* West Lafayette, IN: Purdue University Press.

Editor, with José Ángel Ascunce Arrieta. *El Mundo Está en Todas Partes: La Creación Literaria de Bernardo Atxaga (The World Is Everywhere: The Literary Creation of Bernardo Atxaga).* Barcelona, Spain: Anthropos.

Mark A. Griep — **Chemistry**
Author, with Bev DeVore-Wedding, Janyce Woodard, Hank Miller. *Lab Manual for Connecting Chemistry to the Tribal Community: Two Semesters of Chemistry Experiments and Teachings.* Lincoln, NE: Keeper's Cottage Press.

Editor, with Linette Watkins. *Best Practices for Chemistry REU Programs.* Washington, D.C.: American Chemical Society Press.

Mark A. Hinchman — **Interior Design/Architecture**
Author, with Elyssa Yoneda. *Interior Design Masters.* London, UK: Routledge.

Kristen Hoerl — **Communication Studies**
Author. *The Bad Sixties: Hollywood Memories of the Counterculture, Antiwar, and Black Power Movements.* Jackson, MS: University Press of Mississippi.

Gabriel A. Houck — **English**
Author. *You or a Loved One.* Asheville, NC: Orison Press.

Robert Hutkins — **Food Science and Technology**
Author. *Microbiology and Technology of Fermented Foods.* London, England: Wiley.

Katrina Jagodinsky — **History**

Editor. *Beyond the Borders of the Law: Critical Legal Histories of the North American West.* Lawrence, KS: University Press of Kansas.

Kenneth A. Kiewra — **Educational Psychology**

Author. *Nurturing Children's Talents: A Guide for Parents.* Santa Barbara, CA: ABC-CLIO.

Marjorie J. Kostelnik — **Child, Youth and Family Studies**

Author, with A. K. Soderman, A. P. Whiren, M. L. Rupiper (UNL). *Guiding Children's Social Development, 9th edition.* Boston, MA: Cengage Learning.

Author, with A. K. Soderman, A. P. Whiren, M. L. Rupiper (UNL). *Developmentally Appropriate Curriculum: Best Practices in Early Childhood Education.* New York, NY: Pearson.

Richard Leiter — **Schmid Law Library**

Author. *National Survey of State Laws, 8th edition.* Buffalo, NY: William S. Hein & Co., Inc.

Suping Lu — **University Libraries**

Editor. 忍辱负重的使命 – 美国外交官记载的南京大屠杀与劫后的社会状况 *(A Mission under Duress).* Nanjing, China: Jiangsu People's Publishing House.

Colleen E. Medill — **Law**

Author. *Introduction to Employee Benefits Law: Policy and Practice, 5th edition.* St. Paul, MN: LEG, Inc., dba West Academic.

Chigozie Obioma — **English**

Author. *An Orchestra of Minorities.* New York, NY: Little Brown and Co.

David L. Olson — **Supply Chain Management and Analytics**

Author, with Majid Nabavi (UNL). *Introduction to Business Analytics.* New York, NY: Business Expert Press.

Author, with Georg Lauhoff. *Descriptive Data Mining, 2nd edition.* Singapore: Springer Nature.

Yi Qian — **Electrical and Computer Engineering**

Author, with Haipeng Yao, Chunxiao Jiang, Yi Qian. *Developing Networks Using Artificial Intelligence.* Cham, Switzerland: Springer.

Brett Ratcliffe — **Entomology/ University of Nebraska State Museum**

Author. *A Monographic Revision of the Genus Gymnetis MacLeay, 1819 (Coleoptera: Scarabaeidae: Cetoniinae).* Lincoln, NE: University of Nebraska State Museum.

Patricia A. Simpson — **Modern Languages and Literatures**

Editor, with Elisabeth Krimmer. *Realities and Fantasies of German Female Leadership: From Maria Antonia of Saxony to Angela Merkel.* Rochester, NY: Camden House.

Gerald J. Steinacher — **History**

Author, with Ari Cohen (UNL). *Unlikely Heroes: The Place of Holocaust Rescuers in Research and Teaching.* Lincoln, NE: University of Nebraska Press.

Alison G. Stewart — **Art, Art History, and Design**

Editor, with Miriam H. Kirch, Birgit Ulrike Münch. *Crossroads. Frankfurt am Main and the Art Market in Early Modern Europe.* Petersberg, Germany: Imhof Verlag.

Jay Storz — **Biological Sciences**

Author. *Hemoglobin: Insights into Protein Structure, Function, and Evolution.* New York, NY: Oxford University Press.

Walter W. Stroup — **Statistics**

Author, with George A. Milliken, Elizabeth A. Claassen, Russell D. Wolfinger. *SAS for Mixed Models: Introduction and Basic Applications.* Cary, NC: SAS Institute, Inc.

Jordan Stump — **Modern Languages and Literatures**

Translator. *The Barefoot Woman* by Scholastique Mukasonga. Brooklyn, NY: Archipelago Books.

Alexander Vazansky — **History**

Author. *An Army in Crisis: Social Conflict and the U.S. Army in Germany, 1968–1975.* Lincoln, NE: University of Nebraska Press.

Isabel Velázquez — **Modern Languages and Literatures**

Author. *Household Perspectives on Minority Language Maintenance and Loss: Language in the Small Spaces.* Bristol, UK: Multilingual Matters.

Adrian Wisnicki — **English/Center for Digital Research in the Humanities**

Author. *Fieldwork of Empire, 1840–1900: Intercultural Dynamics in the Production of British Expeditionary Literature.* New York, NY: Routledge.

Recognitions and Honors

Faculty who have been elected to honor academies or who have received national or international honors or awards

July 1, 2018–June 30, 2019

Submitted by faculty, chairs/heads or deans

Brian Larkins — Agronomy and Horticulture/Emeritus Associate Vice Chancellor for Life Sciences
National Academy of Sciences

James Van Etten — Plant Pathology
National Academy of Sciences

Marco Abel — English
Berlin Prize, American Academy in Berlin

John Clark Archer — Geography/Center for Great Plains Studies
E. Willard and Ruby S. Miller Award, American Association of Geographers

Nonfiction Reference Award Winner, 2018 Book Awards Competition, Nebraska Center for the Book

Jack Arterburn — Panhandle Research and Extension Center
Top 10 Industry Leaders under Age 40, *Cattle Business Weekly*

Stacy Asher and Aaron Sutherlen — Art, Art History and Design
50 Books/50 Covers Award, American Institute of Graphic Arts

Steven M. Barlow — Special Education and Communication Disorders/Biological Systems Engineering/Center for Brain, Biology and Behavior
Callier Prize for Outstanding Scientific Achievement, Callier Center, University of Texas – Dallas

Paul N. Black — Biochemistry
Fellow, American Association for the Advancement of Science

Eve Brank — Center on Children, Families, and the Law/Psychology
Outstanding Teaching and Mentoring Award, American Psychology-Law Society

Brent Cejda — Educational Administration
Senior Scholar Award, Council for the Study of Community Colleges

Bertrand S. Clarke — Statistics
Fellow, Institute of Mathematical Statistics

Deb Cosgrove — Accountancy
Outstanding Faculty Advisor Award, Beta Alpha Psi

Andrea S. Cupp — Animal Science
President, Society for the Study of Reproduction

Rochelle L. Dalla — Child, Youth and Family Studies
Outstanding Professional Publication Award–Families and Health, National Council on Family Relations

Kwame Dawes — English
Windham-Campbell Prize, Yale University's Beinecke Rare Book and Manuscript Library

Jeffrey L. Day — Architecture/Landscape Architecture
Progressive Architecture Award, *Architect Magazine*

Fellow, American Institute of Architects

Maria Rosario T. de Guzman — Child, Youth and Family Studies
Ursula Gielen Global Psychology Book Award, American Psychological Association

Leslie Delserone — University Libraries
Editor-in-chief, *Journal of Agricultural and Food Information*

Ken Dewey — Geography and Natural Resources
Public Education Award, National Weather Association

Judy Diamond — University of Nebraska State Museum
Outstanding Administrative Support Award, National Science Education Leadership Association

Robert Diffendal — Natural Resources/University of Nebraska State Museum
Lifetime Achievement Award, Sun Yat-Sen University

Eric Einspahr — College of Education and Human Sciences
Excellence in Advising Award, National Academic Advising Association

Helen Fagan — Agricultural Leadership, Education and Communication/Rural Futures Institute
Paul Harris Fellow, Rotary International

Tracy D. Frank — Earth and Atmospheric Sciences
Fulbright Scholarship Award, Ireland, Council for International Exchange of Scholars

Sheri Fritz — Earth and Atmospheric Sciences
Israel C. Russell Award in Limnogeology, Geological Society of America

Kurt F. Geisinger — Educational Psychology/ Buros Center for Testing
President, International Test Commission

Edmund T. Hamann — Teaching, Learning, and Teacher Education/ Anthropology
Fulbright Scholarship Award, Mexico, Council for International Exchange of Scholars

David G. Imig Distinguished Service Award, Carnegie Project on the Educational Doctorate

Jane Hanson — Programs in English as a Second Language
President's Lifetime Achievement Award, Mensa Foundation

Carrie Heitman — Anthropology/Center for Digital Research in the Humanities
President, Council for Museum Anthropology

Susan Hermiller — Mathematics
Fellow, American Mathematical Society

Chuck Hibberd — Animal Science/Extension
2019 Inductee, National Institute of Food and Agriculture Hall of Fame

Kristen Hoerl — Communication Studies
Best Book Award for 2018, American Studies Division of the National Communication Association

Gabriel A. Houck — English
Creative Writing Fellow in Fiction, Emory University

Jan Hygnstrom — Agronomy and Horticulture
Professional Recognition Award, American Association of Pesticide Safety Educators

Suat Irmak — Biological Systems Engineering
Three Educational Aids Blue Ribbon publications awards, American Society of Agricultural and Biological Engineers (ASABE)

Educational Aids Blue Ribbon Award for educational website (with Aaron Nygren, Jenny Rees, Brandy VanDeWalle and Gary Zoubek, Extension), ASABE

Margaret Jacobs — History
Member, American Academy of Arts and Sciences

Katrina Jagodinsky — History
Jack and Nancy Farley Distinguished Visiting Scholar in History, Simon Fraser University

Paul Jasa — Biological Systems Engineering/Extension
Harold and Kay Scholl Excellence in Conservation Award, Soil and Water Conservation Society

Dipra Jha — Nutrition and Health Sciences
Doctor Honoris Causa, Kyiv Cooperative Institute of Business and Law, Ukraine

John Wiley & Sons Innovation in Teaching Award, International Council on Hotel, Restaurant and Institutional Education

Amit Jhala — Agronomy and Horticulture
Award of Merit in Extension, Gamma Sigma Delta

Outstanding Associate Editor Award, *Canadian Journal of Plant Science*

Jeannette Eileen Jones — Ethnic Studies/ History
Fellow, American Council of Learned Societies

Alice Kang — Political Science/Ethnic Studies
Best Paper Award, *European Journal of Politics and Gender*

Wendy J. Katz — **Art, Art History and Design**
Mellon Fellow, Reynolda House Museum of American Art, Wake Forest University, North Carolina

Casey R. Kelly — **Communication Studies**
Karl R. Wallace Memorial Award, National Communication Association

Richard Leiter — **Schmid Law Library**
Roy M. Mersky Spirit of Law Librarianship Award for Public Service, American Association of Law Libraries

Yijia Lin — **Finance**
Co-editor, *North American Actuarial Journal*

Michael Lippman — **Classics and Religious Studies**
Award for Excellence in Teaching of the Classics at the College Level, Society for Classical Studies

Amanda Morales — **Teaching, Learning, and Teacher Education**
Fellow, American Association of Hispanics in Higher Education

Rodney Moxley — **Veterinary Medicine and Biomedical Sciences**
Honorary Diplomate, American College of Veterinary Microbiologists

ThanhVu Nguyen — **Computer Science and Engineering**
Most Influential Paper Award, International Conference on Software Engineering

Chigozie Obioma — **English**
Shortlist, Booker Prize for Fiction for *An Orchestra of Minorities,* The Booker Prize Foundation

Clyde Ogg — **Extension**
Fellow Award, American Association of Pesticide Safety Educators.

Angela K. Pannier — **Biological Systems Engineering**
2017 Presidential Early Career Awards for Scientists and Engineers, White House Office of Science and Technology Policy

Ellen Paparozzi — **Agronomy and Horticulture**
Pi Alpha Xi Fellow, American Society for Horticultural Science

Peng Peng — **Special Education and Communication Disorders**
2018 Early Career Award for Contributions to Research, International Dyslexia Association

Suzette Person — **Computer Science and Engineering**
Test of Time Award, ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering

Al Peterson — **Mathematics**
Bernd Aulbach Prize, International Society of Difference Equations

Laura Poppo — **Management**
Dan and Mary Lou Schendel Best Paper Prize, Strategic Management Society

Yi Qian — **Electrical and Computer Engineering**
Fellow, Institute of Electrical and Electronics Engineers (IEEE)

Distinguished Technical Achievement Recognition Award, IEEE Technical Committee on Green Communications and Computing

Outstanding Service Award, IEEE Communications and Information Security Technical Committee

Editor-in-chief, *IEEE Wireless Communications*

Gil Renberg — **Classics and Religious Studies**
Charles J. Goodwin Award of Merit, Society for Classical Studies

James Schnable — **Agronomy and Horticulture**
Early Career Scientist Award, North American Plant Phenotyping Network

Wendy Smith — **Center for Science, Mathematics and Computer Education**
Don Miller Distinguished Service Award, Nebraska Association of Teachers of Mathematics

Francisco Souto — **Art, Art History and Design**
Individual Artist Fellowship in Visual Arts, Nebraska Arts Council

Marilyne Stains — **Chemistry**
Presidential Early Career Award for Scientists and Engineers, National Science Foundation

Rising Star Award, American Chemical Society Women Chemists Committee

Joe Starita — **Journalism and Mass Communications**
Sower Award in the Humanities, Humanities Nebraska

Jay Storz — **School of Biological Sciences**
Fulbright Scholarship Award, Argentina, Council for International Exchange of Scholars

Ryan P. Sullivan — **Law**
Pro Bono Leader Award, American Bar Association

Colleen Syron — **Art, Art History and Design**
Honorable Mention, Poster Design, Graphis Design Annual 2020

Honorable Mention, Online Advertising, Neptune Award for Excellence in Marine Marketing Communications, Marine Marketers of America

Silver Medal, Best Poster, American Institute for Graphic Arts

Kim Todd — **Agronomy and Horticulture**
Arborvitae Award, Lauritzen Gardens

Richard Torraco — **Educational Administration**
Elwood F. Holton III Research Excellence Award, *Human Resource Development Review*

Can Vuran — **Computer Science and Engineering**
Top 10 Most Downloaded Articles, *Ad Hoc Networks Journal* (with Suat Irmak, Biological Systems Engineering, Rigoberto Wong and Abdul Salam)

Judy Walker — **Mathematics**
Fellow, Association for Women in Mathematics

Robert "Bob" Wilhelm — **Office of Research and Economic Development**
Fellow, National Academy of Inventors

Tyler Williams — **Extension**
Achievement Award, National Association of County Agricultural Agents

David Wishart — **Geography**
Nonfiction Reference Award Winner, 2018 Book Awards Competition, Nebraska Center for the Book

Adrian Wisnicki — **English/Center for Digital Research in the Humanities**
Seal from Committee on Scholarly Editions for Livingstone's Manuscripts in South Africa (1843-1872), Modern Language Association

Seal from Committee on Scholarly Editions for Livingstone's 1870 Field Diary and Select 1870-1871 Manuscripts, Modern Language Association

Charles Wortmann — **Agronomy and Horticulture**
International Agronomy Award, American Society of Agronomy

Brenda Wristen — **Glenn Korff School of Music**
Outstanding Music Alumna, Lubbock Christian University

Janos Zempleni — **Nutrition and Health Sciences**
Osborne and Mendel Award 2019, American Society for Nutrition

Xiao Cheng Zeng — **Chemistry**
Fellow, Materials Research Society

Glossary of Federal Agency Abbreviations

- DHS — Department of Homeland Security
- DHHS — Department of Health and Human Services
  - ACF — Administration for Children and Families
  - CDC — Centers for Disease Control
  - NIOSH — National Institute for Occupational Safety and Health
  - SAMHSA — Substance Abuse and Mental Health Services Administration
- DOC — Department of Commerce
  - NIST — National Institute of Standards and Technology
  - NOAA — National Oceanic and Atmospheric Administration
- DoD — Department of Defense
  - AFOSR — Air Force Office of Scientific Research
  - ARO — Army Research Office
  - DTRA — Defense Threat Reduction Agency
  - DURIP — Defense University Research Instrumentation Program
  - MDA — Missile Defense Agency
  - MURI — Multidisciplinary University Research Initiatives
  - ONR — Office of Naval Research
  - SERDP — Strategic Environmental Research and Development Program
  - STRATCOM — U.S. Strategic Command
- DOE — Department of Energy
  - ARPA-E — Advanced Research Projects Agency-Energy
  - NETL — National Energy Technology Laboratory
- DOI — Department of Interior
  - FWS — Fish and Wildlife Service
  - GS — Geological Survey
  - NPS — National Park Service
- DOJ — Department of Justice
  - NIJ — National Institute of Justice
- DOT — Department of Transportation
  - FHWA — Federal Highway Administration
  - FRA — Federal Railroad Administration
  - PHMSA — Pipeline and Hazardous Materials Safety Administration
- ED — Department of Education
  - IES — Institute of Education Sciences
- EPA — Environmental Protection Agency
- EPSCoR — Established Program to Stimulate Competitive Research
- IMLS — Institute of Museum and Library Services
- NASA — National Aeronautics and Space Administration
- NCHRP — National Cooperative Highway Research Program
- NEA — National Endowment for the Arts
- NEH — National Endowment for the Humanities
- NIH — National Institutes of Health
  - FIC — Fogarty International Center
  - NCI — National Cancer Institute
  - NHLBI — National Heart, Lung and Blood Institute
  - NIAAA — National Institute on Alcohol Abuse and Alcoholism
  - NIAID — National Institute on Allergy and Infectious Diseases
  - NIBIB — National Institute of Biomedical Imaging and Bioengineering
  - NICHD — National Institute of Child Health and Human Development
  - NIDA — National Institute on Drug Abuse
  - NIDCD — National Institute on Deafness and Communication Disorders
  - NIDDK — National Institute of Diabetes, Digestive and Kidney Disease
  - NIGMS — National Institute on General Medical Sciences
  - NIMH — National Institute of Mental Health
- NSF — National Science Foundation
- USAID — United States Agency for International Development
- USDA — United States Department of Agriculture
  - AFRI — Agriculture and Food Research Initiative
  - ARS — Agricultural Research Service
  - FNS — Food and Nutrition Service
  - FS — Forestry Service
  - NASS — National Agricultural Statistics Service
  - NIFA — National Institute for Food and Agriculture
  - NRCS — Natural Resources Conservation Service
  - OCE — Office of the Chief Economist

Published November 2019 by the University of Nebraska–Lincoln Office of Research and Economic Development

Graphic Designer: Stephanie Severin
Editor: Elizabeth Banset
Contributing Editors: Mardi Bonner, Becky Zavala, Lisa Maupin, Ashley Washburn, Rose Robotham
Printing: University of Nebraska–Lincoln Print Services

Every effort has been made to verify the accuracy and completeness of submissions. Faculty, department chairs and heads and the deans were invited to submit entries online regarding published books, national and international recognitions and creative works in the fine and performing arts and architecture. Information on major sponsored program awards was gathered by the Office of Sponsored Programs. Reports on license agreements were produced by NUtech Ventures.