NEBRASKA CENTER FOR ENERGY SCIENCES RESEARCH

2025 - 2026 Energy Research Grants – Cycle 19 NCESR

The Nebraska Center for Energy Sciences Research (NCESR), a collaboration between the Nebraska Public Power District (NPPD) and the University of Nebraska-Lincoln (UNL), was established in April 2006 to conduct research on renewable energy sources, energy efficiency and energy conservation; and to expand economic opportunities and improve quality of life for Nebraska and the nation.

Goal. The overall goal of the NCESR is to foster research and education in energy sciences by providing funding to support innovative research and collaboration among University of Nebraska-Lincoln faculty and other public- and private-sector organizations and businesses working in energy sciences.

Request for Proposals. The NCESR released the Request for Proposals (RFP) for its nineteenth competitive round of Energy Research Grants on March 19, 2024. The External Advisory Committee (EAC) met on December 18, 2024 and selected the following five energy research projects:

- *Enhanced CO_2 transport for high-efficiency biological carbon capture and biofuel fermentation* – **Dr. Nicole Buan**, Professor of Biochemistry; Institute of Agriculture and Natural Resources
- *Innovative Approaches to Sustainable Agriculture: Greening Ammonium Sulfate Production* – **Dr. Mona Bavarian**, Assistant Professor of Chemical and Biomolecular Engineering, College of Engineering
- *Enhanced Hydrogen Generation and Utilization using Femtosecond Laser-Nanostructured $NiCo_2O_4$ Electrocatalysts* – **Dr. Yongfeng Lu**, Professor of Electrical & Computer Engineering; College of Engineering
- *Innovative Solutions for Data Center Thermal Management: Oxide-Free Femtosecond Laser Processed Copper Surfaces* – **Dr. Graham Kaufman**, Research Assistant Professor of Electrical & Computer Engineering, College of Engineering
- *Advanced manufacturing of high-temperature alloy components for small modular reactors* – **Dr. Bai Cui**, Professor of Mechanical & Materials Engineering, College of Engineering