

## 2014/2015 Energy Research Grants – Cycle 9

**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 ninth competitive round of Energy Research Grants on April 1, 2014.

**Selections.** The External Advisory Committee (EAC) met on December 8, 2014 and selected the following seven energy research projects:

- Implementation of Synthetic Biology for Next-Generation Biofuel Crop Improvements – Edgar Cahoon, Professor, Department of Biochemistry
- Conversion of Carbon Dioxide to Cyclic Carbonates for Polymer Synthesis – Chin Li "Barry" Cheung, Associate Professor, Department of Chemistry
- Mechanisms of Action of Activators of Algal Biomass Production and Lipid Accumulation Grown at Pilot Scale on Anaerobic Digestate of Agricultural Waste Products – Wayne Riekhof, Assistant Professor, School of Biological Sciences
- Integrating Agricultural, Algal and Bioenergy Systems for Nebraska: Fruition of the SUPER Loop – Galen Erickson, Professor, Department of Animal Science
- Biosynthesis of Ethylene Glycol from Renewable Resources – Jiantao Guo, Assistant Professor, Department of Chemistry
- Design and Development of High-Efficiency, Low-Cost Perovskite Solar Cells – Jinsong Huang, Associate Professor, Mechanical and Materials Engineering
- An Optimal Dynamic Operation Model for Participation in the Southwest Power Pool's Energy Market - Wei Qiao, Associate Professor, Department of Electrical & Computer Engineering

**Project Period.** Each project is intended to cover the two-year period of January 1, 2015 through December 31, 2017. Funding was provided for the first year. Funding for the second year is provisional and based on project performance.

January 2015