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## ARD News February 2007

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# Agricultural Research Division News

February 2007

Volume 40, Number 1

## Comments from the Dean

Dear Colleagues:

Two sets of issues will be the major topics of discussion for CARET and the land-grant system as we move through 2007. One is the administrative structure of USDA's research and education agencies and the other is the structure and appropriation levels of the CSREES budget for research, extension and higher education programs. The administrative structure will be an issue in the farm bill reauthorization discussions, while the CSREES budget structure issue will be part of the appropriation discussions.

The CREATE-21 plan that has been developed by the group formed by the NASULGC Board on Agriculture establishes the National Institutes of Food and Agriculture as an independent agency reporting to the Department of Agriculture. The institute would: conduct intramural research for USDA; distribute funds based on formulas to state agricultural experiment stations and cooperative extension services; manage competitive grant programs and, in general, function much like NIH does for the medical sciences.

The administration has proposed a similar, but much simpler, plan that would combine the function of CSREES, ARS and ERS into a single Office of Science under the leadership of the Under Secretary for Research, Education and Economics. This simpler and more easily implemented plan achieves the same objectives of better coordination and planning, more responsive and less complex administration, and program continuity, which were the objectives of CREATE-21. For these reasons, we strongly support the administration's proposals. It is more likely to meet with congressional approval and give the land-grant system what it needs in the shortest time possible and with the least disruption.

The President's proposed budget for FY08 again recommends making the multistate portion of the Hatch formula funds for research competitive. We feel that the multistate peer review and selection process used by the regional associations of Experiment Stations has led to a strong, responsive and highly relevant set of multistate projects. We think that the current funding mechanisms for multistate Hatch projects should remain in place.

We also strongly support increasing the funding levels of

all formula funds and restoring the funding for Animal Health research. We agree with the proposal to move the Section 406 program to the NRI and increase NRI funding overall. This change will allow more efficient operation of the competitive programs.

Gary L. Cunningham  
Dean and Director

## 120<sup>th</sup> ARD Annual Report

The 120<sup>th</sup> Annual Report for the Agricultural Research Division was recently published. Although this report is required by legislation establishing the Nebraska Agricultural Experiment Station on March 31, 1887, it is published primarily as a means to communicate faculty research accomplishments to key decision makers. The publication also serves as a historical record of faculty accomplishments, active projects, faculty and graduate student recognition and outputs from the research program.

The annual report is sent to wide range of people, including the Governor, members of the Nebraska Legislature, the Nebraska Congressional Delegation, University of Nebraska Board of Regents, NU and UNL administrators, state agency directors, USDA officials, ARS collaborators, experiment station directors in other states, and selected IANR clientele. This report may be accessed on the World Wide Web at: <http://www.ard.unl.edu/report.shtml>.

## Endeavors

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Endeavors provides short reports of significant findings from ARD faculty research projects. Each year, this eight-page document highlights the accomplishments of 25 to 30 research projects. The 2005-2006 publication features a broad range of research topics from alternative crops to the impacts of consolidation in the food processing industry.

Endeavors is the principal publication provided to members of the Nebraska Legislature to report on the impacts of Nebraska's investment in agricultural research. Likewise, we use the publication in our meetings with the Nebraska Congressional Delegation and their staffs. It has also been used as the basis for discussions with IANR clientele and support groups. Copies are available for use by unit administrators and faculty in their meetings with unit external advisory committees or other clientele groups. Please contact the ARD office if you would like copies.

## New or Revised Projects

### November and December 2006

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**NEB 03-101 Relocation to the Buffalo Commons: Using a marketing approach to understand residential decisions among migrants to the Nebraska Panhandle**

*Investigator:* Randy Cantrell, Nebraska Rural Initiative  
*Status:* Grant project effective Sept. 1, 2006, through Aug. 30, 2007

**NEB 21-134 Improving food quality, safety, and security using spectral imaging and modeling**

*Investigator:* Jeyamkondan Subbiah, Biological Systems Engineering  
*Status:* Hatch project effective Oct. 1, 2006, through Sept. 30, 2011

**NEB 21-135 NC-1023, Improvement of thermal and alternative processes for foods**

*Investigator:* Milford Hanna, Industrial Agricultural Products Center  
*Status:* Multistate project effective Oct. 1, 2006, through Sept. 30, 2010

**NEB 22-317 Application of micropropagation and biotechnology to improvement and multiplication of horticultural crops**

*Investigator:* Paul Read, Agronomy  
*Status:* Hatch project effective Oct. 1, 2006, through Sept. 30, 2011

**NEB 22-319 Influence of root-zone organic matter on putting green quality and performance**

*Investigator:* Roch Gaussoin, Agronomy  
*Status:* Hatch project effective Mar. 1, 2007, through Feb. 28, 2012

**NEB 27-061 Longitudinal evaluation of Latino family development**

*Investigator:* Cody Hollist, Family and Consumer Sciences  
*Status:* Hatch project effective June 1, 2007, through May 31, 2012

**NEB 35-002 Training graduate students in plant breeding using crop drought tolerance improvement as a model**

*Investigator:* Sally Mackenzie, Plant Science Initiative  
*Status:* Grant project effective Dec. 1, 2006, through Nov. 30, 2007

**NEB 35-105 Etiology, epidemiology and management of wheat disease in Nebraska**

*Investigator:* Stephen Wegulo, Plant Pathology  
*Status:* Hatch project effective Nov. 1, 2006, through Oct. 31, 2011

**NEB 35-106 Ecology, management, and detection of important corn diseases and mycotoxins in Nebraska**

*Investigator:* Tamra Jackson, Plant Pathology  
*Status:* Hatch project effective Dec. 1, 2006, through Nov. 30, 2011

**NEB 37-032 Building research collaborations to enhance rural economic development**

*Investigator:* Nancy Miller, Textiles, Clothing and Design  
*Status:* Grant project effective Jan. 1, 2007, through Dec. 31, 2007

**NEB 37-033 Textile materials and technologies addressing energy, health and other national security issues**

*Investigator:* Yiqi Yang, Textiles, Clothing and Design  
*Status:* Multistate project effective Oct. 1, 2006, through Sept. 30, 2011

**NEB 38-050 Shelterbelts: Structure and function**

*Investigator:* Jim Brandle, School of Natural Resources  
*Status:* McStennis project effective Nov. 1, 2006, through Oct. 31, 2011

**NEB 38-051 Population dynamics of paddlefish in the lower Missouri River sub-basin**

*Investigator:* Mark Pegg, School of Natural Resources  
*Status:* Hatch project effective Nov. 1, 2006, through Oct. 31, 2011

**NEB 42-101 SCD322, Flies impacting livestock, poultry and food safety**

*Investigator:* John B. Campbell, West Central Research and Extension Center  
*Status:* Multistate project effective Oct. 1, 2006, through Sept. 30, 2011

**NEB 43-102 Promoting healthful eating to prevent excessive weight gain in young adults**

*Investigator:* Linda Boeckner, Panhandle Research and Extension Center  
*Status:* Multistate project effective Oct. 1, 2006, through Sept. 30, 2011

**NEB 43-103 Genetic improvement of dry edible beans**  
*Investigator:* Carlos Urrea, Panhandle Research and Extension Center

*Status:* Hatch project effective Nov. 1, 2006, through Oct. 31, 2011

## **Proposals Submitted for Federal Grants November and December 2006**

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The following is a listing of proposals that were submitted during November and December 2006 by faculty for federal grant programs. While not all grants will be funded, we are appreciative of the faculty members' outstanding efforts in submitting proposals to the various agencies.

**John Yohe** – US AID – International Sorghum, Millet and Other Grains Collaborative Research Support Program – \$9,000,000

**Alexander Pavlista** – USDA-CSREES – Development of multipurpose potato cultivars with enhanced quality – \$2,500

**David Steffen** – USDA-CSREES – NAHLN: NE (National Animal Health Laboratory Network-Nebraska) – \$50,000

**Roy Spalding** – USDA-CSREES – Reducing groundwater nitrate concentrations – \$22,768

**David Billesbach** – Department of Energy – Development and field testing of a rapidly deployable carbon dioxide flux management system – \$63,218

**Derrel Martin** – Bureau of Reclamation – Modeling and field experimentation to determine the effects of land terracing and non-federal reservoirs on water supplies in the Republican River basin – \$75,000

**Kenneth Cassman and Haishun Yang** – NSF – Before globalization: Pre-contact intensive agriculture and society in Kohala, Hawaii – \$186,815

**Alan Tomkins, Craig Allen, Xun-hong Chen, David Gosselin, Kyle Hoagland, Karina Schoengold, and Walter Stroup** – NSF – A feedback model for natural systems-human systems coupling – \$1,453,144

**James Van Etten** – NIH-University of California San Francisco – Center of Innovation in Membrane Protein – \$140,902

**Robert Oglesby, Karina Schoengold, Erkan Istanbuluoglu, Durrelle Scott, James Williams, Jr., Suat Irmak, and Vitaly Zlot** – NSF – Complex, inter-related natural and human dynamical systems: climate, water, and agriculture in the Great Plains – \$1,475,722

**Raul Barletta** – USDA-NRICGP – Mycobacterium avium subsp. paratuberculosis pathogenesis – \$161,561

**Harshavardhan Thippareddi** – USDA-CSREES – Improv-

ing safety of shell eggs and egg products by addressing critical research needs for salmonella enteritidis and salmonella – \$599,951

**Stephen Baenziger** – USDA-Washington State University – Studying of genetic diversity in spring wheat triticum aestivum – \$5,000

**John Lenters** – Department of Energy-NICCR – Impacts of past and future changes in climate and atmospheric composition on terrestrial ecosystem structure and functioning in the Midwestern U.S. – \$132,069

**Mark Hutchison** – North Central Region SARE – Identification of producer certification options for local food initiatives – \$57,390

**David Carter and Leon Higley** – National Institute of Justice – Presumptive testing for bloodstains associated with insect artifacts – \$134,913

**David Gosselin, Paul Blum, Wayne Woldt, and Daniel Snow** – NSF – Microbially mediated arsenic mobility in groundwater systems stressed by high capacity pumping – \$357,475

**John Lenters** – NSF – Collaborative Research: Changes in lake dynamics on the Arctic Coastal Plain of North America over the past half-century – \$124,755

**Donald Becker** – NIH – Role of proline in redox homeostasis and apoptosis – \$1,455,796

**Robert Klein** – USDA-Washington State University – Controlling jointed goatgrass with moldboard plowing – \$8,000

**Steven Thomas** – NDEQ – Project implementation plan for ecological evaluation of bank restoration in the Cedar River – \$149,952

**Stephen Baenziger, Charles Shapiro, Drew Lyon, Stevan Knezevic, William Russell, Gary Hein, Stephen Wegulo, Rolando Flores, Vicki Schlegel, and Randy Wehling** – USDA-NRI – Developing small grains cultivars optimally suited for organic production – \$823,610

**Kyle Hoagland** – National Park Service – Evaluation of the potential impacts of human physical disturbance on Benthic communities in tributaries of the Niobrara – \$5,000

**Craig Allen and Gary Lynne** – USDA-CSREES – Understanding resilience in working agricultural landscapes – \$398,657

**Carolyn Edwards and Susan Sheridan** – NIH – Increasing Zambia's research capacity with children and families with HIV/AIDS – \$2,184,374

**Steven Thomas** – NSF – Collaborative research: Nutrient processing and retention in streams – \$221,859

# Grants and Contracts Received for November and December 2006

<b>Agricultural Economics:</b>	
Richard Perrin – USDA, ARS, NPA, NRRC	\$27,400.00
<b>Agricultural Research Division:</b>	
John Yohe – US AID	\$400,000.00
<b>Agronomy and Horticulture:</b>	
Ken Cassman – Nebraska Corn Board	\$25,504.00
Ismail Dweikat – Nebraska Sorghum Board	\$13,500.00
George Graef – United Soybean Board	\$70,985.00
Mark Lagrimini – USDA, ARS, NPA, NRRC	\$26,250.00
Roy Spalding – USDA-CSREES	\$22,768.00
Roy Spalding – Nebraska Department of Agriculture	\$31,000.00
Miscellaneous Grants under \$10,000	\$42,000.00
<b>Animal Science:</b>	
Miscellaneous Grants under \$10,000	\$31,930.00
<b>Biological Systems Engineering:</b>	
David Billesbach – Department of Energy	\$63,218.00
Derrel Martin – Bureau of Reclamation	\$75,000.00
<b>Entomology:</b>	
Blair Siegfried – Nebraska Soybean Board	\$16,422.00
Miscellaneous Grants under \$10,000	\$2,500.00
<b>Food Science and Technology:</b>	
Harshavardhan Thippareddi – USDA-CSREES	\$599,951.00
Miscellaneous Grants under \$10,000	\$1,530.00
<b>Northeast Research and Extension Center:</b>	
Miscellaneous Grants under \$10,000	\$20,000.00
<b>Panhandle Research and Extension Center:</b>	
Gary Hein and Kansas State University – USDA-IPM	\$99,581.00
Gary Hergert, Paul Burgener, Derrel Martin, Raymond Supalla, Drew Lyon, Dean Yonts, Alex Pavlista, and David Baltensperger – USDA-FCIC	\$885,093.00
Miscellaneous Grants under \$10,000	\$26,500.00
<b>Plant Pathology:</b>	
Amit Mitra – Nebraska Soybean Board	\$20,000.00
James Van Etten and the University of California – NIH	\$140,902.00
Miscellaneous Grants under \$10,000	\$46,050.00
<b>School of Natural Resources:</b>	
Craig Allen – James S. McDonnell Foundation	\$80,654.63
Daniel Snow – Nebraska Department of Environmental Quality	\$60,000.00
John Holz – Nebraska Department of Environmental Quality	\$44,494.00
Susan Lackey – Nebraska Health and Human Services	\$26,400.00
Mark Pegg – Nebraska Game and Parks	\$133,000.00
Mark Pegg – Nebraska Game and Parks	\$33,300.00
Mark Pegg – Nebraska Game and Parks	\$25,000.00
Larkin Powell – Platte River Whooping Crane Maintenance Trust, Inc.	\$25,000.00
Steven Thomas – NSF	\$87,866.00
<b>Statistics:</b>	
Dave Marx – USDA-ARS	\$50,000.00
<b>Veterinary and Biomedical Sciences:</b>	
David Steffen – USDA-CSREES	\$50,000.00
<b>West Central Research and Extension Center:</b>	
Miscellaneous Grants under \$10,000	\$12,054.00
<b>Total</b>	<b>\$3,315,852.63</b>

