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INSTITUTE OF AGRICULTURE AND NATURAL RESOURCES

University of Nebraska Lincoln

Agricultural Research Division News

June 2008 Volume 41, Number 3

Comments from Dean Gary Cunningham

As most, if not all, of you know by now, we do have a new farm bill, passed by Congress and signed by the President. The tradition in Congress has been to give each new farm bill a title that reflects the bill's major emphasis or aspirations. The new bill is called the Food, Conservation, and Energy Act of 2008. Unlike other recent farm bills, this one legislates some major changes in the research and education title that affect the agency that funds programs at our land-grant universities and administrates the USDA's competitive grant research, extension and higher education programs. Most of these changes are organizational and should not have major impacts on our programs or funding. There are, however, some changes that have the potential to increase funding, both from new competitive grant programs with mandatory funding (i.e., no need for appropriation each year) and from authorization for increases in the allowable appropriation level for existing grant programs (with new names).

The Under Secretary for Research, Education and Economics (the under secretary in charge of the mission area that includes CSREES, ARS, ERS and NASS) will also carry the title of "Chief Scientist" for USDA. This individual is required to develop an annual USDA science "Roadmap" that is essentially a strategic plan for the coordination of research, extension and education among the agencies in the REE mission area. This is to be done by a program staff drawn from the agencies' existing staff. This staff will represent the six divisions of the REE office: Renewable energy, resources and environment; Food safety, nutrition and health; Plant health, production and products; Animal health, production and products; Agriculture systems and technology; Agriculture economics and rural communities.

The current Cooperative State Research Education and Extension Service (CSREES) will be renamed the National Institute for Food and Agriculture (NIFA). All of the existing programs and funding authorities of CSREES will be retained by NIFA. NIFA will be led by a director who is to be an "esteemed" scientist appointed by the President for a six-year term. The NIFA director will report to the Secretary of Agriculture or the Secretary's designee.

The competitive grant program has been renamed the Agriculture and Food Research Initiative (AFRI). This program combines the funding authorities of the National Research Initiative (NRI) and the Initiative for Future Agriculture and Food Systems (IFAFS). The funding authorization for AFRI is $700 million, an increase of $200 million over the NRI authorization. Actual funding in any one year will still be determined by the appropriation process. Without great effort by the land-grant universities, the actual appropriations are not likely to be greater than the current level for the NRI. The intent of Congress is that the actual appropriation will be divided; 60% for basic research, 40% for applied research, and 30% of all grants must be integrated projects with at least two of the three land-grant functions (research, extension or education). The actual implementation will depend on NIFA-developed RFAs. The facilities and administration costs on AFRI grants will be limited to 22% of total costs, which roughly equates to 29% of the modified total costs used by NSF and other federal agencies.

NIFA is also authorized to administer a new set of competitive grant programs with mandatory funding that does not require annual appropriations by Congress, as well as discretional funding that does require appropriation each year. There will be four such programs:

1. A research and extension program in organic agriculture, which will begin in FY 2009 with $18 million in mandatory and $25 million in authorized discretionary funding per year.
2. A specialty crops research program that will begin in FY 2008 with $30 million in mandatory and $100 million in authorized discretionary funding per year.
3. A New Farmer/Rancher grant program that will begin in FY 2009 with $18 million in mandatory and $30 million in authorized discretionary funding per year.
4. A biomass research and development program that will begin in FY 2009 with $20 million in mandatory and $35 million in authorized discretionary funding per year.

Some of these authorization levels will increase slightly over the five-year life of the Food, Conservation, and Energy Act.

This is the overall plan. As I mentioned earlier, this should not have major impacts on our programs. On the positive side, it could, as many hope, lead to enhanced funding opportunities for our programs in the future. More details will become apparent as our federal partners implement this plan and begin to release their requests for applications. ARD will continue its positive engagement with USDA, Congress and our fellow land-grant institutions and make every effort to ensure that these changes are positive for Nebraska.

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IANR

William G. Whitmore Student Travel Endowment

The William G. Whitmore memorial fund was established at the University of Nebraska Foundation in 1980 as a memorial to William G. Whitmore, a member of the Board of Regents at the University of Nebraska from 1902-1916. The income from the fund supports a travel grant program for graduate students within IANR whose advisor or co-advisor has an ARD research appointment. In accordance with the donor instructions, this program will support attendance to professional society meetings in the fields of animal science, agricultural education and leadership, and veterinary and biomedical sciences. Priority for grants will be given to graduate students who are personally presenting the results of their research and/or scholarly investigations.

The Whitmore Research Travel Committee makes grants for expenses, including transportation (which is not to exceed coach class airfare), registration, lodging, meals, etc. Grants under this program are limited to a maximum of $500 per individual per fiscal year for travel during the period July1st through December 31st, 2008, as follows:

Name: Nathan Meyer
Department: Animal Science
Meeting: American Society of Animal Science Meeting
Place: Indianapolis, Indiana

Name: Debasis Nayak
Department: Veterinary and Biomedical Sciences
Meeting: American Society of Virology
Place: Ithaca, New York

The next call for these travel funds will be sent to the unit administrators around the second week in September 2008 for travel from January 1st to July 31st, 2009.

Burlington Northern Endowment

The Burlington Northern Endowment Grant was established in the University of Nebraska Foundation in 1982 to support water and irrigation research projects related to the general areas of agriculture and natural resources, including forest lands and wetlands. It is not intended to address water issues related to municipal, industrial, or domestic use, or to waste disposal sites. The ARD office received six proposals and funded three from the Burlington and one from the Agricultural and Water Research Endowment. Those funded are:

Tom Franti (Biological Systems Engineering)
"Evaluating water sustainability with the watershed footprint"
Amount Funded: $4,700

Gary Hergert (Panhandle Research and Extension Center)
"Effect of different irrigation allocations on perennial grass for growing cellulosic materials for ethanol production"
Amount Funded: $9,000

C. Dean Yonts (Panhandle Research and Extension Center)
"How much soil water can be conserved using a no-till system with a crop rotation of sugarbeets, dry beans and corn?"
Amount Funded: $11,000

Julie Huddle (School of Natural Resources)
"Effects of eastern redcedar on the hydrology of cotton wood stands in the Republican River Basin"
Amount Funded: $10,000

ARD Advisory Council Election Results

The following faculty members have been elected to the ARD Advisory Council for a three-year period beginning July 1, 2008.

District 1: **Amalia Yiannaka** (Agricultural Economics). Representing faculty in the Agricultural Economics and Food Science and Technology Departments.

District 5: **Raul Barletta** (Veterinary and Biomedical Sciences). Representing faculty in the Statistics, Entomology and Veterinary and Biomedical Sciences Departments.

District 6: **Jim Alfano** (Plant Pathology). Representing faculty in the Biochemistry and Plant Pathology Departments.

Continuing ARD Advisory Council members are:

District 2: **Rhae Drijber** (Agronomy and Horticulture). Representing faculty in the Agronomy and Horticulture Department.

District 3: **Jim Brandle** (School of Natural Resources). Representing faculty in the School of Natural Resources.

District 4: **Brett White** (Animal Science). Representing faculty in the Departments of Animal Science and Biological Systems Engineering.

District 7: **Nancy Lewis** (Nutrition and Health Sciences). Representing faculty in the Departments of Agricultural Leadership, Education and Communication, Child, Youth and Family Studies, Nutrition and Health Sciences and Textiles, Clothing and Design.

District 8: **Rick Funston** (West Central Research and Extension Center). Representing faculty in the Northeast Research and Extension Center, Panhandle Research and Extension Center and West Central Research and Extension Center.

Please join the ARD staff in expressing appreciation to Lance Meinke, Jaekwon Lee, and Richard Perrin for their dedicated support of the ARD Advisory Council during the past three years. Their contributions have been invaluable in surfacing concerns, providing input and selecting award recipients. We wish them continued success in their academic careers.

National Science Foundation

SAVE THE DATE!

The first National Science Foundation Regional Grants Conference of fiscal year 2009 will be hosted by the University of Nebraska–Lincoln in Omaha – October 20-21, 2008, with optional FastLane/Grants.gov sessions on the 19th.

The two-day conference is a must, especially for new faculty, researchers and administrators who want to gain key insight into a wide range of current issues at NSF, including the state of current funding, new and current policies and procedures and pertinent administrative issues. NSF program officers representing each NSF directorate will be on hand to provide up-to-date information about specific funding opportunities and answer your questions.

Highlights include:

- New programs and initiatives
- Future directors and strategies for national science policy
- Proposal preparation
- NSF's merit review process
- Cross-disciplinary and special interest programs
- Conflict of interest policies
- Breakout sessions by discipline

An early registration discount will be offered for UNL faculty, and transportation between UNL and the conference site in Omaha will be provided. Watch for more information at http://research.unl.edu.

Undergraduate Honors Research Program

Funds for the 2008-2009 Academic Undergraduate Honors Student Research Program have been allocated to units for support of undergraduate student research projects. This program is open to junior and senior University Honors Program students proposing to work with a faculty research mentor who has an ARD appointment. Four proposals were received and funded. The following students have received funding:

Alisha O'Malley (Biochemistry) $2,500
Mentor: Dr. Melanie Simpson
"Structural Determinations of UDP-Glucose Dehydrogenase"

Joshua J. Bies (Biochemistry) $2,500
Mentor: Joan Krush
"Identification and Characterization of a Cadmium Efflux Pump in *Aspergillus fumigatas*"

Lisa Karel (Biological Systems Engineering) $2,500
Mentor: Dr. Greg Bashford
"Regulation of Heart Rate Variability with ECG Biodfeedbacks"

Dennis Bierle (Biological Systems Engineering) $2,500
Mentor: Dr. Jeyam Subbiah
"Tissue Characterization Using Hyperspectral Imaging"

David H. and Annie E. Larrick Fund July-December 2008

The David H. and Annie E. Larrick fund supports travel of graduate students who are conducting research in fields other than animal science, agricultural education and leadership, and veterinary and biomedical sciences. The Larrick endowment will assist the following students with $500 travel grants to present research findings at national or regional meetings.

Name: Gregory Gifford
Department: Agricultural Leadership, Education and Communication
Meeting: Midwest Academy of Management Conference
Place: St. Louis, MO

Name: Joana S.P. Story
Department: Agricultural Leadership, Education and Communication
Meeting: Midwest Academy of Management Conference
Place: St. Louis, MO

Name: Juan Pablo Sesmero
Department Agricultural Economics
Meeting: American Agricultural Economics Annual Meeting
Place: Orlando, FL

Name: Jose L. Aponte-Rivera
Department: Agronomy and Horticulture
Meeting: Molecular and Cellular Biology of the Soybeans Meeting
Place: Indianapolis, IN

Name: Kenton Peterson
Department: Agronomy and Horticulture
Meeting: Soil Science Society of America Crop Science Meeting
Place: Houston, TX

Name: Desalengn Debelo Serba
Department: Agronomy and Horticulture
Meeting: Joint Annual Meeting (Society of Agronomy/Crop Science)
Place: Houston, TX

Name: Matthew Giovanni
Department: Agronomy and Horticulture

Meeting: American Omithologists' Union Meeting
Place: Portland, OR

Name: Mallorie Wilken
Department: Animal Science
Meeting: American Society of Animal Science Meeting
Place: Indianapolis, IN

Name: Mahmoud Masa'deh
Department: Animal Science
Meeting: Poultry Science Meeting
Place: Niagara Falls, Ontario, Canada

Name: Kelsey Rolfe
Department: Animal Science
Meeting: American Society of Animal Science Meeting
Place: Indianapolis, IN

Name: David Adle
Department: Biochemistry
Meeting: P-ATPase Meeting
Place: Aarhus, Denmark

Name: Tiantian Xu
Department: Biological Systems Engineering
Meeting: IEEE International Ultrasonics Symposium
Place: Beijing, China

Name: Luis Octavio Lagos
Department: Biological Systems Engineering
Meeting: American Water Resource Association Conference
Place: New Orleans, LA

Name: Barburao Kamble
Department: Civil Engineering
Meeting: IEEE International Geoscience and Remote Sensing Symposium
Place: Boston, MA

Name: Jesus Orozco-Arajo
Department: Entomology
Meeting: Entomological Society of America Annual Meeting
Place: Reno, NV

Name: Rakhi Panda
Department: Food Science and Technology
Meeting: Annual Convention of Institute of Food Technologists
Place: New Orleans, LA

Name: Anuja Patnaik
Department: Food Science and Technology
Meeting: Annual Convention of Institute of Food Technologists
Place: New Orleans, LA

Name: Kari Brauer
Department: Plant Pathology
Meeting: American Phytopathological Society Meeting
Place: Minneapolis, MN

Name: Hu Yin
Department: Plant Pathology
Meeting: American Phytopathological Society Meeting
Place: Minneapolis, MN

Name: Karen Leavelle
Department: School of Natural Resources
Meeting: American Omithologists' Union Meeting
Place: Portland, OR

Name: Tony Barada
Department: School of Natural Resources
Meeting: American Fisheries Society Meeting
Place: Ottawa, Ontario, Canada

Name: Jennifer Green
Department: Statistics
Meeting: American Statistical Association Meeting
Place: Denver, CO

Name: Xiaojuan Mi
Department: Statistics
Meeting: American Society of Agronomy Meeting
Place: Houston, TX

Name: Jonathan Gregory
Department: Textiles, Clothing and Design
Meeting: Textile Society of America Symposium
Place: Honolulu, HI

New or Revised Projects March and April 2008

NEB 21-141 S-1033, Control of food-borne pathogens in pre- and post-harvest environments
Investigator: Jeyamkondan Subbiah, Biological Systems Engineering
Status: Multistate project effective Oct. 1, 2007, through Sept. 30, 2012

NEB 22-328 Genetics, breeding and evaluation of winter small grains crops for Nebraska
Investigator: P. Stephen Baenziger, Agronomy and Horticulture
Status: Hatch project effective April 1, 2008, through March 30, 2013

NEB 24-161 Innovation activity in the agri-food system: agricultural biotechnology, regulations and the role of the cooperative organization
Investigator: Konstantinos Giannakas, Agricultural Economics
Status: Hatch project effective Feb. 1, 2008, through Jan. 31, 2013

NEB 28-094 Improved monitoring techniques and EILs for western bean cutworm on field corn
Investigator: Robert Wright, Entomology
Status: Special Grant project effective June 1, 2008, through May 31, 2010

NEB 36-069 Regulator mechanism of intestinal cholesterol absorption
Investigator: Tim Carr, Nutrition and Health Sciences
Status: Hatch project effective Jan. 1, 2008, through Dec. 31, 2012

NEB 42-104 NC1038, Methods to increase reproductive efficiency in cattle
Investigator: Rick Funston, West Central Research and Extension Center
Status: Multistate project effective Oct. 1, 2007, through Sept. 30, 2012

NEB 43-106 Intensification of winter wheat-based dryland cropping systems for western Nebraska
Investigator: Drew Lyon, Panhandle Research and Extension Center
Status: Hatch project effective April 1, 2008, through March 31, 2013

Proposals Submitted for Federal Grants March and April 2008

The following is a listing of proposals that were submitted during March and April 2008 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.

Shannon Bartelt-Hunt and Daniel Snow – NSF – Collaborative Research: Fate and bioavailability of estrogenic compounds in aquatic sediment – $191,228

David Jackson, Randy Wehling and RM Ratnayake – USDA/CSREES/NRI – Understanding starch functionality in cereal foods – $345,838

Melanie Simpson – University of Oklahoma (NIH) – Structure-function of the HA receptor for endocytosis – $499,319

Robert Wilson and Gustavo Sbatella – NRI – Seed cache and dispersal by granivorous rodents in agricultural fields and their impact on invasive weeds – $208,888

Mark Wilson – NIH – Structural basis of DJ-1 function in Parkinson's disease – $1,355,297

Gilles Basset – NSF – Phylloquinone (vitamin K1) metabolism in plants – $468,395

Sunil Narumalani and Donald Rundquist – EPA – Seagrass habitat mapping Louisiana and Mississippi – $102,130

Paul Hanson – NSF – Linking loess landforms and eolian processes – $39,101

David Steffen – USDA/APHIS – Classical swine fever surveillance – $52,866

Raymond Supalla, Derrel Martin, Gary Hergert, Christopher Thompson, Paul Burgener and Brian McMullen – USDA/RME – Risk management with limited irrigation – $74,690

William Lewis, Ruth Heaton, Thomas McGowan, Walter Stroup, Carolyn Edwards and Ira Papick – NSF – NEBRASKA MATH – $9,235,407

Sunil Narumalani – USDA/APHIS – Purple loosestrife (lythrum salicaria) mapping and biocontrol along the Niobrara Scenic River – $39,274

Susan Sheridan, Carolyn Edwards, Lisa Knoche and James Bovaird – NIH – Preparandose: Promoting school readiness in preschool ELL children – $3,547,144

Steve Taylor – USDA/CSREES/SRGP – Alliance for Food Protection-Nebraska 2008 – $121,305

Rolando Flores – USDA/CSREES/SRGP – Midwest Advanced Food Manufacturing Alliance – $340,764

Michael Hayes, Cody Knutson and Brian Wardlow – USDA/CSREES/SRGP – Drought Mitigation, Nebraska – $347,246

Blair Siegfried – USDA/ARS – Effects of new BT products and larval ecology on the relative risks of ECB resistance management strategies – $43,500

Donald Rundquist – NASA – Developing a vineyard-suitability map for five counties in southeast Nebraska using GIS and aircraft/satellite imagery – $20,500

Ismail Dweikat – USDA/CSREES – Enhancing the economic potential of producing biofuels from sweet sorghum – $138,898

Rick Goodman – USDA Foreign Agricultural Service – Norman E. Borlaug international agricultural science and technology fellows program for India – $44,220

Kyle Hoagland and Lorrie Benson – USDA – Creating a professional science master's program in the Great Plains – $173,038

Rhae Drijber – USDA/ARS – Developing technologies to improve soil and nutrient management – $65,000

Grants and Contracts Received for March and April 2008

Agronomy and Horticulture:	
Mark Bernards – Pioneer Hybrids	$10,000.00
Kenneth Cassman – NCRA of Experiment State Directors	$12,000.00
Roy Spalding – Nebraska Department of Agriculture	$31,000.00
Miscellaneous Grants under $10,000	$82,900.00
Animal Science:	
Miscellaneous Grants under $10,000	$5,000.00
Biochemistry:	
Joseph Barycki – NIH	$219,464.00
Donald Becker – NIH	$301,208.00
Melanie Simpson – NIH-Cancer Institute	$205,583.00
Robert Spreitzer – U.S. Department of Energy	$130,000.00
Biological Systems Engineering	
Viacheslav Adamchuk – Channing B. and Katherine W. Baker Fund	$12,000.00
Miscellaneous Grants under $10,000	$9,069.00
Entomology:	
Blair Siegfried – USDA/ARS	$25,000.00
Miscellaneous Grants under $10,000	$32,500.00
Food Science and Technology:	
Rolando Flores – Nebraska Wheat Board	$33,084.00
Rick Goodman – USDA Foreign Agricultural Service	$44,220.00
Vicki Schlegel – Nebraska Cyriaca Cooperative	$26,000.00
Randy Wehling, Michael Zeece and Harshavardhan Thippareddi – American Meat Institute Foundation	$70,750.00
Miscellaneous Grants under $10,000	$1,442.00
Northeast Research and Extension Center:	
Dennis Bauer – Haskell Agricultural Lab Swine Program Excellence Fund	$12,013.00
Miscellaneous Grants under $10,000	$56,450.00
Panhandle Research and Extension Center:	
Robert Wilson, Jr. – Pioneer Hi-Bred International	$10,000.00
Miscellaneous Grants under $10,000	$17,500.00
Plant Pathology:	
Gary Yuen and Thomas Powers – NRI	$59,739.00
Miscellaneous Grants under $10,000	$90,877.00
School of Natural Resources:	
Paul Hanson – NSF	$12,885.00
Susan Lackey and James Goeke – Lower Loup NRD	$75,000.00
Steven Thomas – University of California, Riverside	$80,248.00
Miscellaneous Grants under $10,000	$8,000.00
Statistics:	
David Marx – NIH	$25,280.00
Veterinary and Biomedical Sciences:	
David Steffen – Nebraska Department of Health and Human Services	$19,200.00
David Steffen – USDA/APHIS	$52,866.00
Miscellaneous Grants under $10,000	$10,057.00
Water Center:	
Kyle Hoagland – U.S. Geological Survey	$92,335.00
West Central Research and Extension Center	
Don Adams – Gudmunsen Sandhills Lab Student Support Fund	$23,540.00
Jerry Volesky – Sampson Range and Pasture Management	$10,000.00
Miscellaneous Grants under $10,000	$17,100.00
TOTAL	**$1,943,510.00**