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June 2006

Volume 39, Number 3

Comments from the Dean

Dear Colleagues,

A think tank appointed by NASULGC's Board on Agriculture Assembly is now shopping a proposal we all can expect to hear about in the coming months.

It's called Creating Research, Extension, and Teaching Excellence for the 21st Century (CREATE-21), and its admirable goal is to increase Hatch, Smith-Lever and McIntire-Stennis funding.

Over the next few months we'll be looking closely at the proposal's premise as to how that would occur. Initial information is long on concept but short on details, and solid facts are needed before any of us can decide whether we think this new proposal is better than the system already in place for how land-grant universities serve our nation.

CREATE-21 is a response to President Bush's 2006 budget proposal to eliminate Hatch, McIntire-Stennis and Animal Health funding in favor of competitive grants. Congress restored those funds, and the House of Representatives did so again in the FY07 budget when President Bush proposed converting, over the next five years, half of Hatch and McIntire-Stennis funds to competitive grants to be awarded for longer-term, multistate research projects addressing significant agricultural problems facing a region or segment of the industry.

There is concern in NASULGC's Board on Agriculture Assembly that these funds continue to be under scrutiny. That's coupled with concern that Hatch and Smith-Lever funding, in terms of constant 1997 dollars, has declined from 1997 to 2005.

Some people say the only way to gain new investment for Hatch, Smith-Lever and McIntire-Stennis is through a new program. CREATE-21 proposes an additional \$688 million federal investment over seven years, with 50 percent of any new funding to go into the traditional Hatch, McIntire-Stennis, Animal Health and Smith-Lever formula funds, and the other 50 percent to fund multistate competitive grants and other competitive programs.

Other people question why we would disturb the traditional Hatch, McIntire-Stennis and Smith-Lever system that has served this country so well since the Hatch Act passed in 1887. They ask why we can't make a strong case for all the

current system has done and continues to do for our country as a way to gain additional funding. They question whether new money actually will occur to fund the CREATE-21 proposal. They caution that in a time of limited funding for discretionary programs, legislators might decide to use the dollars now allocated under the current plan in the new way proposed by CREATE-21, actually reducing dollars used to address needs in individual states.

The Policy Board of Directors of NASUGLC's Board on Agriculture Assembly will vote in September on whether or not to put CREATE-21 forward as draft legislation. Here in the Institute, we are working hard to gain the details of the plan to determine if CREATE-21 would be of benefit or detrimental to the work we do for Nebraska.

We will not endorse either CREATE-21 or continuation of the current system until we have critically examined all information available, and have gained answers to our questions.

I hope you will join this endeavor to thoroughly explore the concepts behind CREATE-21. I welcome your input in this matter.

Gary L. Cunningham
Dean and Director

Station Project ID Numbers

Over the next five years, ARD will be changing the Station Project numbers (Hatch, Multistate, McIntire-Stennis, Animal Health) to reflect the current Cost Center/WBS numbering scheme. For example: Station Project, NEB 12-150 will now be NEB 22-150. The current Station Projects will not change, but as new projects are developed or revised, they will receive the new departmental identification number. Most ARD research projects are developed for a five-year period; therefore, it will take five years to convert to the new project numbering system. Since we are not changing the current project identification numbers, we hope this transition will not cause any problems. If you have questions or concerns, please contact the ARD office.

Journal Series Numbers

Beginning July 1, 2006, departments will no longer need to forward their publications to the Agricultural Research Division office for a journal series number. But, we are requesting that all department's refereed publications, whether a journal series number has been assigned or not, be included in the 120th ARD Annual Report this year.

ARD GIS Development Maps

Would you like to see the history of the land use of ARD's Research and Extension Centers and Facilities? The ARD GIS development maps can provide that type of information.

In 2002, these maps were created by CALMIT and have since been maintained by our GIS coordinator, Karen Jackson, in the ARD office. Each center and facility has a coordinator that works with Karen in providing yearly information for the maps.

The maps provide the centers and facilities a year-by-year history of the land use and help decide what experiments to do and the best land to perform them on. The ARD GIS Development Maps can be found on the ARD website, <http://ard.unl.edu>, by putting your cursor on the "Res. Ctrs./Facilities" tab and then clicking on the "GIS Devel. Maps" option.

ARD Out-of-State Travel

Policy - Professional Society Meetings

The current policy within the Agricultural Research Division is not to allow the use of state-appropriated funds (2162XX0001) for travel support to attend professional society meetings. This policy also applies to the use of revolving account funds, which in the eyes of the state financial offices are the same as state-appropriated funds.

This policy was adopted several years ago by ARD as a result of attempts by state government accountants to identify areas within the University budget that could be easily reduced or deleted without significant impact on the program. While we believe it is very important for faculty members to attend professional society meetings, it has been difficult to communicate the importance of this to state government. In order to reduce this vulnerability, a decision was made that travel to such meetings would have to be on other funding, primarily grant funds, IANR professional development funds and IANR research travel grant funds. The ARD administration also feels that it is desirable to use appropriated funds to the greatest extent possible to support research programs, rather than for travel support. This policy was recently reviewed and reconfirmed as standard operating policy for ARD.

Exceptions to this policy have been made on a case-by-case basis. There are instances with new faculty and other situations whereby alternative sources of travel funds may not be available, but it is still highly desirable to have the faculty

member attend the meeting with travel costs paid. Unit administrators wishing to use state-appropriated funds to support a faculty member's attendance at a professional society meeting should seek ARD approval before travel is initiated.

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, 2006.

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 AgLEEC, Family and Consumer Sciences, 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

Continuing ARD Advisory Council members are:

District 1: **Richard Perrin** (Agricultural Economics). Representing faculty in the Departments of Agricultural Economics and Food Science and Technology

District 2: **Charles Wortmann** (Agronomy and Horticulture). Representing faculty in the Department of Agronomy and Horticulture

District 3: **Tala Awada** (School of Natural Resources). Representing faculty in the School of Natural Resources

District 5: **Lance Meinke** (Entomology). Representing faculty in the Departments of Statistics, Entomology and Veterinary and Biomedical Sciences

District 6: **Jaekwon Lee** (Biochemistry). Representing faculty in the Departments of Biochemistry and Plant Pathology

Please join the ARD staff in expressing appreciation to Galen Erickson, Dean Eisenhauer, Viacheslav Adamchuk, Yiqi Yang and Dillon Feuz 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.

ARD Interdisciplinary Research Grants Program

Seventeen proposals were submitted to the ARD Interdisciplinary Research Grants Program and three proposals were selected for 2006-2007 funding. We were, however, able to fund two continuation projects. New ARD Interdisciplinary Research Grants were awarded as follows:

Daniel Snow, School of Natural Resources
[Alan Kolok/Biology-UNO and Galen Erickson/Animal Science]

"Environmental Stewardship of Cattle Wastes: Do Growth Promoting Steroids Alter Toxicity"

Total Amount Received: \$20,000
Funding Period: July 1, 2006 - June 30, 2007

John Holz, School of Natural Resources
[Aris Holz and James Merchant/School of Natural Resources and Erkan Istanbuluoglu/Geosciences]

"Determination of Appropriate Lake Water Quality Expectations in Agriculturally Dominated Ecosystems"

Total Amount Received: \$19,964
Funding Period: July 1, 2006 - June 30, 2007

Raul Barletta, Veterinary and Biomedical Sciences
[Robert Powers and James Takacs/Chemistry Department]
"Development of Broad-Spectrum Antibiotics Against Bacterial Pathogens"

Total Amount Received: \$20,000
Funding Period: July 1, 2006 - June 30, 2007

The following continuing projects have been evaluated and will continue for 2006-2007:

Brett White, Animal Science Department
[Janos Zempleni/Nutrition and Health Sciences]
"Impact of Biotin Supplementation on Early Embryonic Development"

Total Amount Received: \$20,000
Funding Period: July 1, 2006 - June 30, 2007

Jack Weber, Animal Science Department
[Gerald Duhamel/Veterinary and Biomedical Sciences]
"Genetic Basis of Resistance to Food-borne Bacterial Pathogens"

Total Amount Received: \$20,000
Funding Period: July 1, 2006 - June 30, 2007

Undergraduate Honors Research Program

Funds for the FY 2006-2007 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. Eight proposals were received and they were all funded. The following students have received funding:

Jenna Giagarra (Animal Science Department) \$2,500
Mentor: Dr. Rodger Johnson
"Locomotive Muscle Contraction Variation in Strides Between Differing Equine Breeds"

Andrea Schwarz (Animal Science Department) \$2,500
Mentor: Drs. Phillip Miller & Galen Erickson
"Forage Quality and Grazing Performance of Beef Cattle Utilizing Grain Sorghum Residue with or without the Brown midrib (BMR) Trait"

Kathryn Cockerill (Animal Science Department) \$2,500
Mentor: Dr. Merlyn Nielsen
"Variation in Steroid Hormone (FSH, LH and Insulin) Concentrations in Mature Females of Mouse Lines Divergently Selected for Heat Loss"

Anna Fuller (Animal Science Department) \$2,500
Mentor: Drs. Mary Beck and John Weber
"The Role of Bcl2L in Controlling Sertoli Cell Numbers in the Developing Testes"

Kate Breister (Animal Science Department) \$2,500
Mentor: Dr. Merlyn Nielsen
"Address Changes in Male Fertility and Reproductive Physiology in Selected Lines of Mice"

Kara Blobaum (Biological Sciences Department) \$2,500
Mentor: Dr. Ji-Young Lee
*"Mechanisms Underlying the Modulation of the Expression of Cellular Cholesterol Regulatory Proteins by *Nostoc commune* a Blue-green Alga"*

Brent Hanson (Biological Systems Engineering) \$2,500
Mentor: Drs. Dennis Schulte and Curtis Weller
"Yogurt Powder Functional Properties as Affected by Drying Methods"

Natsuki Nagashima (Veterinary and Biomedical Sciences) \$2,500
Mentor: Dr. Gerald Duhamel
*"Characterization of *Brachyspira pilosicoli* Isolated from Humans and Animals Using Multilocus Sequence Typing"*

New or Revised Projects March and April 2006

NEB 12-288 Identification and analysis of jasmonic acid signal transduction components in plants
Investigator: Paul Staswick, Agronomy and Horticulture
Status: Hatch project effective Apr. 1, 2006, through Mar. 31, 2011

NEB 13-177 Maximizing energy captured by feeding corn ethanol co-products to dairy cattle
Investigator: Paul Kononoff, Animal Science
Status: Hatch project effective Nov. 1, 2005, through Nov. 1, 2010

NEB 16-107 Development of protein microarray technology for agriculture applications: Implementation of lectin chip
Investigator: Michael Zeece, Food Science and Technology
Status: Hatch project effective Jan. 2, 2006, through Jan. 1, 2011

NEB 21-133 A machine vision system for plant species identification, enumeration and mapping for precision crop management

Investigator: George Meyer, Biological Systems Engineering
Status: Hatch project effective May 1, 2006, through April 30, 2011

NEB 31-108 NC 1131, Molecular mechanisms regulating skeletal muscle growth and differentiation

Investigator: Michael Zeece, Food Science and Technology
Status: Multistate project effective Oct. 1, 2005 through Sept. 30, 2010

NEB 44-069 Ecology, restoration, and management of semi-arid prairies in the Northern Great Plains

Investigator: Patrick Reece, Panhandle Research and Extension Center

Status: Hatch project effective Nov. 1, 2005 through Nov. 30, 2010

NEB 44-070 Predicting wheat curl mite movement and wheat streak mosaic virus spread

Investigator: Gary Hein, Panhandle Research and Extension Center

Status: Grant project effective June 1, 2006 through May 31, 2009

Proposals Submitted for Federal Grants March and April 2006

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

Rochelle Dalla, Cathey Huddleston-Casas, Rich Bischoff, Craig Smith, and Kathy Bosch – NRI – Push and pull factors influencing latino immigrant stability in rural communities – \$499,990

Ruma Banerjee – NIH – Radical enzyme and its escorts – \$1,432,030

Kyle Hoagland – U.S. Geological Survey – Water Resources Research Institute annual base program – \$92,335

David Billesbach and Timothy Arkebauer – U.S. Department of Energy – Effects of decoupled climate variables on grassland ecosystems – \$359,690

Kyle Hoagland and Sherilyn Fritz – U.S. EPA – Solving complex water issues in Nebraska: Study Phase II – \$347,200

Robert Hutkins, Rod Moxley, and Kari Shoaf – NRI – Anti-adherence activity of prebiotic galactooligosaccharides against enteric pathogen – \$328,129

Donald Becker – NIH – Coordination of functions by proline metabolic proteins – \$443,424

Donald Becker – NSF – NSF REU Site: Training in Redox Biology – \$188,250

Donald Becker and Robert Powers – NSF – Redox dependent macromolecular associations of the PutA flavoenzyme – \$545,718

David Baltensperger and Lenis Nelson – NRI – Development and management of canola in the Great Plains Region – \$9,000

Ayse Irmak, Achim Dobermann, and David Marx – NSF – Quantifying soil carbon stocks at multiple scales – \$1,590,364

Shripat Kamble, Grzesiek Buczkowski, and Susan C. Jones – USDA-CSREES – Multistate IPM strategy to manage subterranean termites in the North Central Region – \$86,525

Xun-Hong Chen – USDA – Integration of streambed conductance investigation technology in stream-aquifer management plan – \$65,198

Blair D. Siegfried – USDA-CSREES – Identification and validation of midgut specific target sites for control of the western corn rootworm – \$421,904

Blair D. Siegfried and John E. Foster – USDA-CSREES – Risk of western corn rootworm adaptation to transgenic corn – \$132,924

Blair D. Siegfried – USDA-CSREES – Quantifying risk factors for evolution of European corn borer resistance to Cry1F expressing corn hybrids – \$346,845

Richard Goodman, Stephen Taylor, Lingyun Chen, and Vicki Schlegel – EPA – Delineation of appropriate specific and targeted IgE serum testing to assess the potential allergenicity of proteins introduced by genetic engineering – \$450,000

W. Wyatt Hoback – Bureau of Land Reclamation – Survey for the presence of American Burying Beetle, Ainsworth Irrigation Unit, Nebraska – \$9,228

Stephen L. Taylor – USDA-CSREES – Midwest Advanced Food Manufacturing Alliance – \$462,110

Craig R. Allen – USDA – Relationship between diversity and invasion on large-scale grassland restorations – \$34,960

Shashi B. Verma, Kenneth G. Cassman, Timothy J. Arkebauer, Achim Dobermann, Daniel Ginting, Kenneth G. Hubbard, Johannes Knops, Andrew Suyker, Daniel Walters, and Haishun Yang – Department of Energy – Carbon sequestration in dryland and irrigated agroecosystems: Quantification at different scales for improved prediction – \$1,050,000

James R. Steadman – USDA-ARS – Resistance improvement of bean through multi-site screening and pathogen characterization – \$60,875

Donald Wilhite – NRI – Drought mitigation project-Nebraska – \$205,177

David Marx – NIH – Effect of gender and TMD on mandibular mechanics – \$33,901

Roy Spalding, Mary Exner, Richard Ferguson, David Marx, and Peter Nowak – USDA-CSREES – Effectiveness of irrigated crop management practices in reducing groundwater nitrate concentrations – \$645,318

Susan Hefle – USDA-CSREES – Alliance for Food Protection – \$145,103

Patrick Shea – USDA-CSREES – Targeting watershed vulnerability and behaviors leading to adoption of conservation management practices – \$599,890

David Gosselin and Ronald Bonnstetter – NSF – Improving the quality of earth systems science teaching across the nation – \$534,361

David Gosselin and Ronald Bonnstetter – NSF – National network of collaborative research experiences for educators – \$1,759,073

Gary Hein, Drew Lyon, and Paul Burgener – USDA-ARS – Biologically intensive areawide IPM of the Russian Wheat Aphid and Greenbug – \$90,771

Stephen Baenziger – USDA-ARS-NPS – Developing winter wheat with improved fusarium head blight tolerance by conventional and transgenic approaches – \$42,072

Donald Rundquist – NASA – NASA space grant year 14 – \$7,500

Grants and Contracts Received for March and April 2006

Agronomy and Horticulture:

Steve Baenziger and the University of California
– NRI \$20,000.00
Miscellaneous Grants under \$10,000 \$41,299.00

Animal Science:

Rick Rasby, Terry Klopfenstein, and Galen Erickson
– Abengoa Bioenergy \$26,280.00

Biochemistry:

Joseph Barycki – NIH \$202,339.00
Don Becker – NSF \$188,250.00
Steve Ragsdale – National Institute of General
Medical Sciences \$302,959.00

Biological Systems Engineering

Suat Irmak – Monsanto Company \$30,000.00

Entomology:

Lance Meinke – Syngenta Seeds, Inc. \$34,047.00
Robert J. Wright and W. Wyatt Hoback
– USDA-APHIS \$25,907.00
Miscellaneous Grants under \$10,000 \$6,250.00

Food Science and Technology:

Lloyd Bullerman and Milford Hanna
– USDA-CSREES-From Texas Woman's
University \$90,660.00
Miscellaneous Grants under \$10,000 \$3,075.00

Industrial Agricultural Products Center:

Milford Hanna – USDA-CSREES \$60,000.00

Northeast Research and Extension Center:

Keith Jarvi – Syngenta Seeds, Inc. \$15,000.00
Miscellaneous Grants under \$10,000 \$27,692.00

Panhandle Research and Extension Center:

Bob Harveson – Western Sugar Company \$31,000.00
Gary Hein, Drew Lyon, and Paul Burgener
– USDA-ARS \$90,771.00
Miscellaneous Grants under \$10,000 \$27,400.00

Plant Pathology:

Loren Giesler – Novus International \$10,000.00
Tom Powers – NRI \$42,607.00
Miscellaneous Grants under \$10,000 \$11,975.00

School of Natural Resources:

Kyle Hoagland and Sherilyn Fritz – U.S. EPA \$347,200.00
Kyle Hoagland – U.S. Geological Survey \$92,335.00
John Holz, Aris Holz, and Kyle Hoagland
– Nebraska Department of Environmental
Quality \$26,853.00
Sunil Narumalani – Nebraska Military \$17,644.00
Sunil Narumalani – Nebraska Military \$69,418.00
Richard Tyre – Nebraska Health and Human Services \$51,000.00

Statistics:

David Marx – NIH \$33,901.00

Veterinary and Biomedical Sciences:

Clayton L. Kelling – Alpaca Research Foundation \$21,000.00
David Smith – Nebraska Department of Agriculture \$25,000.00
Miscellaneous Grants under \$10,000 \$3,000.00

West Central Research and Extension Center

Miscellaneous Grants under \$10,000 \$4,000.00

TOTAL \$1,978,862.00