June 2007

Comments from the Dean

Dear Colleagues:

During the most recent meeting of the ARD Advisory Council, our conversation turned to the “At Work for Nebraska” study prepared by the Battelle Institute. You probably recall that this study, released earlier in the year, was designed to assess the economic impact of IANR programs on the state of Nebraska. You, like the members of the Advisory Council, were probably very pleased and very proud to learn that through your efforts, the people of Nebraska receive more than a 15 to 1 return on their investment in IANR. You may also be wondering, as some of them were wondering, why everyone in the state does not know about the great dividends that are being gained through investing in IANR and why they are not clamoring for greater investments. The simple answer is probably that they just do not know about the study or its remarkable conclusion.

Why don’t the people of Nebraska and even our colleagues in other parts of our university, know about these remarkable findings? Have we put the study and excerpts from it on our Web pages? Have we written and delivered press releases to the newspapers and other news media in the state? Have we delivered the same material to state officials, legislators, and IANR support groups? Of course, the answer to each of these questions is “yes”. Some people do know this tremendous story, but not everyone. Most people have not even heard the message, and as teachers you understand that it is a long way from hearing a message to knowing it.

My message to you is that we do have this tremendous story to tell and telling it is not only important to us as educators and researchers, but also important to the citizens we serve. Telling our story to those we serve, students as well as practitioners, will help them know, and they in turn will inform and educate others. The tasks of educating our publics about the value of what we do is the responsibility of each of us. “At Work for Nebraska” is our story. Each of us can tell it proudly in terms of how our work benefits Nebraskans. That is what it is really about. We are a land-grant university. We are at work for Nebraska. Sometimes we act as if we believe a one-time telling, perhaps in the media, is all that is needed to get the message across. As educators we know that is not true. The more times, the more places, the more ways a message can be delivered, the better it will be known.

The “At Work for Nebraska” study is a tool for us. It is a tool for future planning, and it is a tool for communicating the value of what we do so our constituents can take full advantage of our work.

Other tools are available to help us tell that story. The www.atworkfornebraska.unl.edu Web site has tools already in place for your use, and more are in the works. This is a long-term project.

There are slides to include in a PowerPoint presentation that briefly address the “At Work” study and what it means for Nebraskans. These can be easily incorporated into your programs and presentations for any audience.

There are handouts, each aimed at different aspects of IANR’s work. You can print them off or order specific handouts of interest to your audience by contacting Judy Nelson (jnelson5@unl.edu) in CIT. Have a few in your briefcase and office to share with stakeholders and consider them for meetings.

No matter how great the tools, they cannot do a thing if we do not use them. I hope you will make use of all of the tools available and all of your skills as an educator to tell the story of how our being at work for Nebraska benefits our state and its people.

Gary L. Cunningham
Dean and Director

Williams Endowment

The Williams Endowment was established in the University of Nebraska Foundation in 1993 to support high priority experiments and research related to water and land conservation. The endowment interest income has accumulated to a level that competitive grants can be made available. The specific focus of the research may be changed in future solicitations as emerging priorities change.

For the current competitive cycle, project proposals should relate to “management of surface water run-off and erosion from agricultural land to achieve total maximum daily loading (TMDL) compliance”. Examples of approaches to address this could include: (a) land and cropping management, (b) conservation buffer strips, (c) conservation structures, (d) animal waste management, and/or (e) site-specific nutrient management. The proposals received were awarded to:

Agricultural Research Division, Office of the Dean
P.O. Box 830704, Lincoln, NE 68583-0704
Phone (402) 472-2045, Fax (402) 472-9071
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, 2007.

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.

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

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.

District 7: Nancy Lewis (Nutrition and Health Sciences). Representing faculty in the Departments of Agricultural Leadership, Education and Communications; 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 Charles Wortmann and Tala Awada 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**

Fifteen proposals were submitted to the ARD Interdisciplinary Research Grants Program and two proposals were selected for 2007-2008 funding. We were, however, able to fund three continuation projects. New ARD Interdisciplinary Research Grants were awarded as follows:

**Tala Awada**, School of Natural Resources

[Julie Stone and Jiusheng Lin/Biochemistry; Tom Clemente and James Specht/Agronomy and Horticulture; and Saadia Bihimidine, School of Natural Resources]

"Physiological Effects of Drought Stress-Responsive Transgenes in Soybeans"

Total Amount Received: $19,650
Funding Period: July 1, 2007 - June 30, 2008

**Blair Siegfried**, Entomology Department

[David Dunigan, James Van Etten, and Thomas Powers/Plant Pathology and Bradley Plantz and Vicki Schlegel, Food Science and Technology]

"Isolation and Characterization of Novel Cellulose Digesting Enzymes"

Total Amount Received: $20,000
Funding Period: July 1, 2007 - June 30, 2008

**Raul Barletta**, Veterinary and Biomedical Sciences

[Robert Powers and James Takacs/Chemistry]

"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 2007-2008:

**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, 2007 - June 30, 2008

**John Holz**, School of Natural Resources

[Aris Holz and James Merchant/School of Natural Resources and Erkan Istanbulluoglu/Geosciences]

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

Total Amount Received: $19,964
Funding Period: July 1, 2007 - June 30, 2008

**Undergraduate Honors Research Program**

Funds for the 2007-2008 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. Six proposals were received and funded. The following students have received funding:

**Ayako Ebata** (Agricultural Economics Department) $2,500
Mentor: Dr. Lilyan Fulginiti
"Ecologically and Technologically Sustainable Agricultural Productivity Growth"

**Emily Veburg** (Agricultural Economics Department) $2,500
Mentor: Dr. Richard Perrin
"A Statistical Analysis of the Location and Economic Effects of Ethanol Plants"

**Lauren Volentine** (Biochemistry Department) $2,500
Mentor: Dr. Jaekwon Lee
"Characterization of the Function and Regulation of the CCC2 Copper Transporter"

**Megan Elizabeth Krause** (Biological Systems Engineering Department) $2,500
Mentor: Dr. Gregory Bashford
"Safe Patient Handling: A Biomechanical Analysis of Sit to Stand Devices Versus Normal Human Movement"

**Robert Com** (Biological Systems Engineering Department) $2,500
Mentor: Dr. Gregory Bashford
"Optimization of Signal Processing Parameters for Analyzing Transcranial Blood Flow in Pediatric Patients"

**Isaac Mortensen** (Biological Systems Engineering Department) $2,500
Mentor: Dr. Jeyamkondan Subbiah
"Near Infrared Reflectance Spectroscopy to Detect Moisture Content in Unshelled Peanuts"

**Helpful Hints**

To find information on the F&A Rate for the NRI Competitive Grant Program, you can access the following URL:

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.

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<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Meeting</th>
<th>Place</th>
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<td>Almed Al-Wadaay</td>
<td>Agronomy and Horticulture</td>
<td>American Society of Agronomy</td>
<td>New Orleans, LA</td>
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<td>Zhanbei Liang</td>
<td>Agronomy and Horticulture</td>
<td>American Society of Agronomy/Crop Science</td>
<td>New Orleans, LA</td>
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<tr>
<td>Darrin Roberts</td>
<td>Agronomy and Horticulture</td>
<td>American Society of Agronomy/Crop Science</td>
<td>New Orleans, LA</td>
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<td>Boon Hoe Lim</td>
<td>Biochemistry</td>
<td>Plant Biology and Botany Joint Congress</td>
<td>Chicago, IL</td>
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<td>Michael Moxley</td>
<td>Biochemistry</td>
<td>National Institute of Health/Proline Symposium</td>
<td>Fredrick, MD</td>
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<td>Shah Huda</td>
<td>Biological Systems Engineering</td>
<td>Society of Plastics Engineers</td>
<td>Sahar, Mumbai, India</td>
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<tr>
<td>Govindarajan Suresh Babu</td>
<td>Biological Systems Engineering</td>
<td>Institute of Food Technology Food Expo</td>
<td>Chicago, IL</td>
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<tr>
<td>Mahesh Pun</td>
<td>Biological Systems Engineering</td>
<td>National Ground Water Expo</td>
<td>Orlando, FL</td>
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<td>Heartwin Pushpadass</td>
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<tr>
<td>Siew-Yoong Lee</td>
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<tr>
<td>Eric Newgard</td>
<td>Biological Systems Engineering</td>
<td>American Association of Cereal Chemists</td>
<td>San Antonio, TX</td>
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<td>Megan Borer</td>
<td>Child, Youth and Family Studies</td>
<td>Child Care Policy Research Consortium</td>
<td>Washington, DC</td>
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<tr>
<td>Belle Howell</td>
<td>Child, Youth and Family Studies</td>
<td>Child Care Policy Research Consortium</td>
<td>Washington, DC</td>
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<td>Analiza P. Alves</td>
<td>Entomology</td>
<td>Entomological Society of America</td>
<td>San Diego, CA</td>
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<td>Andre Luis Barreto Crespo</td>
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<td>Michael Fisher</td>
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<td>Julia Colby</td>
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<td>Audrey Wesseling</td>
<td>Food Science and Technology</td>
<td>Institute of Food Technology</td>
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<td>David Monsalve</td>
<td>Food Science and Technology</td>
<td>American Society of Animal Science/Poultry Science</td>
<td>San Antonio, TX</td>
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<td>Lakshman Rajagopal</td>
<td>Nutrition and Health Sciences</td>
<td>Council of Hotel, Restaurant &amp; Instructional Study</td>
<td>Dallas, TX</td>
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<td>William Rittenour</td>
<td>Plant Pathology</td>
<td>American Phytopathological Society</td>
<td>San Diego, CA</td>
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<td>Giane M. Yanai-Balser</td>
<td>Plant Pathology</td>
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Arch and Frances Jorgenson Fund

A charitable trust was established at the University of Nebraska Foundation through the estate of Arch and Frances Jorgensen. The funds were designated to be used as research initiative funds for new research addressing agricultural research priorities in the Sandhills and graduate student fellowship supplement for students conducting research on crop production on sandy soils, range management and ecology of beef/range systems. This foundation grant was awarded to:

Aaron Stalker, Animal Science Department
“Wet Distillers Grains as a Range Supplement and Forage Substitute”

Total Amount Received: $2,300
Funding Period: June 1, 2007 - May 31, 2008

Ralph H. Bainbridge Memorial Fund

A charitable memorial fund was established at the University of Nebraska Foundation through the Ralph H. Bainbridge Estate. These funds are to be used to support interdisciplinary research teams working in the area of beef production and grassland research and development. Two proposals were received and two were awarded.

Aaron Stalker, Animal Science Department
[Terry Klopfenstein, Animal Science; Walter Schacht, Agronomy and Horticulture; and Jerry Volesky, West Central Research and Extension Center]
“Wet Distillers Grains as a Range Supplement and Forage Substitute”

Total Amount Received: $5,000
Funding Period: June 1, 2007 - May 31, 2008

Rick Funston, Panhandle Research and Extension Center
[Matt Stockton and Jerry Volesky, Panhandle Research and Extension Center; and Aaron Stalker, Animal Science]
“Effect of Supplement Nutrition on Embryo Survival and Pregnancy Rate in Beef Heifers”

Total Amount Received: $5,000
Funding Period: June 1, 2007 - May 31, 2008

Helen Porter Van Spronssen Charitable Trust

A charitable trust was established at the University of Nebraska Foundation for Helen Porter Van Spronssen by Lucille Porter. The trust mandates that funds be used for agricultural and water research or related farm and agricultural study. Funds are for a graduate research assistant (GRA) assigned to an approved ARD project in range and livestock research at the Gudmundsen Sandhills Laboratory. The proposal received was awarded to:

Aaron Stalker, Animal Science Department
[Terry Klopfenstein, Animal Science Department; Jerry Volesky, West Central Research and Extension Center]
“Wet Distillers Grains as a Range Supplement and Forage Substitute”

Total Amount Received: $2,300
Funding Period: June 1, 2007 - May 31, 2008

The Whitmore Research Travel Committee makes grants for expenses, including transportation (which is not to exceed coach class fare), 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 July 1 through December 31, 2007 as follows:

Name: Jacqueline Smith
Department: Animal Science
Meeting: Society for the Study of Reproduction
Place: San Antonio, TX

Name: Krishman Navasona
Department: Biochemistry
Meeting: Gordon Research Conference
Place: Des Moines, Iowa

The next call for these travel funds will be sent to the unit administrators around the second week in October 2007 for travel from January 1 to June 30, 2008.
West Central Research and Extension Center; and Walter Schacht, Agronomy and Horticulture.

"Wet Distillers Grains as a Range Supplement and Forage Substitute"

Total Amount Received: $10,000
Funding Period: June 1, 2007 - May 31, 2008

**New or Revised Projects**

**March and April 2007**

**NEB 22-321** Environmentally-appropriate management of soils for high intensity human uses  
*Investigator:* Dennis McCallister, Agronomy and Horticulture  
*Status:* Hatch project effective April 1, 2007, through March 31, 2012

**NEB 37-035** Process and property investigations of fibers from Nebraska’s agricultural products and by-products  
*Investigator:* Yiqi Yang, Textiles, Clothing and Design  
*Status:* Hatch project effective April 1, 2007, through March 31, 2012

**NEB 39-145** NC 1027, An integrated approach to control of bovine respiratory diseases  
*Investigator:* Clinton Jones, Veterinary and Biomedical Sciences  
*Status:* Multistate project effective Oct. 1, 2006, through Sept. 30, 2011

**NEB 42-102** The economics of alternative beef cattle production systems using strategic specific simulation modeling  
*Investigator:* Matthew Stockton, West Central Research and Extension Center  
*Status:* Hatch project effective April 1, 2007, through March 31, 2012

**Proposals Submitted for Federal Grants**

**March and April 2007**

The following is a listing of proposals that were submitted during March and April 2007 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.

**James Alfano** – NIH – ADP-ribosyltransferase – $1,815,506


**James Van Etten** – NSF-University of Massachusetts-Lead – Chlorella genomics: Comparison of symbiotic chlorella spp. NC64A – $352,877

**Kyle Hoagland** – USGS – Water Resources Research Institute Annual Base Program – $92,335

**David Marx** – NIH-University of Missouri-Kansas subcontract – Joules in the human TMJ: Differences in mechanical work done in women and men – $119,828

**Larkin Powell and Richard Tyre** – NRCS – State wildlife surveys as sources of information of wildlife benefits from Farm Bill programs – $70,935

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

**Vadim Gladyshev** – NIH – Methionine sulfoxide reduction selenium and aging – $240,601

**Greg Somerville** – NIH – Environmental regulation of staphylococcus epidermidis PIA synthesis – $31,379

**Ken Hubbard** – NOAA – Improvement and implementation of instrument-change adjustment models for U.S. daily historical maximum and minimum temperatures (1950s to 2000s) – $59,522

**Steve Hu** – NOAA – Transition of weather and climate forecasts into effective decision-making tools – $99,359

**Greg Somerville, Robert Powers (PI), Ronald Cerny, Mark Grieb, David Hage, and Peter Revesz** – Department of Energy – Functional annotation of novel microbial proteins using NMR spectroscopy – $1,490,822

**Jaekwon Lee** – NIH – Mechanistic insights into homeostatic copper acquisition – $90,148

**David Steffen** – USDA/APHIS/WS ADS Procurement Branch – AI lab testing for the State of Nebraska (Avian Influenza Testing) (Req #78122) – $47,000

**David Steffen** – USDA/APHIS/MRPBS/ASD Procurement Branch – AI lab testing for the State of Kansas (Avian Influenza Testing Services) (Req #78723) – $33,425

**Rhae Drijber** – USDA/ARS – Developing technologies to improve soil and nutrient management – $34,000

**Stevan Knezevic, Charlie Shapiro, Tom Hunt, and Mark Bernards** – U.S. Army Corps of Engineers – Total vegetation control on sandbars along the Missouri river utilizing lime and herbicides – $198,136

**Stephen Ragsdale** – National Institute of General Medical Sciences – Enzymology of the Reductive Acetyl-CoA Pathway – $294,173

**Charles Wortmann** – USAID – Crop, soil and water management to optimize grain yield and quality for value-added markets in eastern and southern Africa – $348,500

**Robert Hutkins and Jayne Stratton** – USDA/AMS – Improving safety, quality and accessibility of farmer’s market products
Grants and Contracts Received for March and April 2007

**Agronomy and Horticulture:**
- Rhae Drijber – USDA/ARS
  - $34,000.00
- Miscellaneous Grants under $10,000
  - $39,839.00

**Animal Science:**
- Chris Calkins and Galen Erickson
  - Nebraska Beef Council
  - $90,919.00
- Phil Miller, Rodger Johnson, and Tom Burkey
  - Monsanto
  - $19,152.00
- Miscellaneous Grants under $10,000
  - $2,750.00

**Biochemistry:**
- Donald Becker – NIH
  - $297,863.00
- Vadim Gladyshev – NIH
  - $240,601.00
- Steve Ragsdale – National Institute of General Medical Sciences
  - $294,173.00

**Biological Systems Engineering**
- Derrel Martin – Nebraska Department of Natural Resources
  - $209,440.00

**Entomology:**
- Blair Siegfried and John Foster – USDA/CSREES
  - $106,814.00
- Robert Wright – USDA/APHIS
  - $25,907.00
- Miscellaneous Grants under $10,000
  - $6,300.00

**Food Science and Technology:**
- Lloyd Bullerman – Kraft Foods Global, Inc.
  - $25,000.00
- Miscellaneous Grants under $10,000
  - $1,690.00

**Northeast Research and Extension Center:**
- Keith Jarvi – Syngenta
  - $16,000.00
- Miscellaneous Grants under $10,000
  - $10,200.00

**Panhandle Research and Extension Center:**
- Miscellaneous Grants under $10,000
  - $81,670.00

**Plant Pathology:**
- Gary Yuen and Thomas Powers – NRI
  - $58,089.00
- Miscellaneous Grants under $10,000
  - $33,450.00

**School of Natural Resources:**
- Xun-hong Chen – Lower Platte North Natural Resources District
  - $119,504.00
- Steve Comfort and Vital Ziotnik – Environmental Science and Technology Certification
  - $98,777.00
- John Holz, Aris Holz, Tadd Barrow, and Kyle Hoagland – Nebraska Department of Environmental Quality
  - $201,700.00
- Steve Hu – NOAA
  - $99,359.00
- Ken Hubbard – NOAA
  - $59,522.00
- Ken Hubbard – NPDC and NCF
  - $60,370.00
- Susan Lackey – Upper Elkhorn Natural Resources District
  - $27,000.00
- James Merchant – Nebraska Health and Human Services
  - $33,000.00
- Steven Thomas – NDEQ
  - $149,952.00
- Richard (Drew) Tyre – Nebraska State Wildlife
  - $64,990.00
- Miscellaneous Grants under $10,000
  - $2,400.00

**Veterinary and Biomedical Sciences:**
- Greg Somerville – NIH
  - $31,379.00
- David Steffen – USDA/APHIS/WS
  - $47,000.00
- David Steffen – USDA/APHIS/MRPB
  - $33,425.00
- Miscellaneous Grants under $10,000
  - $2,500.00

**West Central Research and Extension Center**
- Miscellaneous Grants under $10,000
  - $15,014.00

**TOTAL**
- $2,659,749.00