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# Agricultural Research Division News

August 2007

Volume 40, Number 4

## Comments from the Dean

The beginning of a new academic year, it seems to me, is an excellent time to reflect for a moment on what we do and why we are doing it. Each of you, I am sure, is well aware of the goals and outcomes you expect from your individual research programs or projects, and it is easy enough for you to justify your work to colleagues and funding agencies. It is important, however, for us to justify our work individually and collectively to those who provide the largest share of our financial support, the citizens of Nebraska and the nation. We need to be able to tell them why and how the results of our research are important to them, their children, their communities and their future.

The best tools we have for doing this are the strategic plan for IANR and the research and extension plan-of-work for CSREES that is based on the strategic plan. The plan-of-work is built around three programs, each with a number of ultimate goals and outcome targets. The three program areas and outcome targets (goals) are below. (In case you don't make a habit of reviewing our plan-of-work on the CSREES Web site.)

The critical feature of these programs and goals I want to call to your attention is that they are focused on the end users, the people of Nebraska and the nation. As NU President J.B. Milliken has pointed out the last two times I have heard him speak (both in the last month), it is essential for public institutions, particularly land-grant universities like UNL, to focus their goals and objectives outward on the people we serve, not on the characteristics or attributes of the institution.

I hope that as each of you contemplate what you want to achieve this year, those achievements relate to providing valued knowledge for the people of Nebraska.

### Plan-of-Work Programs and Goals

Program:

Sustainable and Economically Viable Food and Biomass Systems

Goals:

- Nebraska farmers, ranchers and agribusinesses will have effective, productive management systems.
- Nebraska farmers and ranchers will have sustainable crop and livestock production systems.
- Nebraska agricultural commodities and products will have viable domestic and global markets.

- Nebraska's ag-based industries will have available an appropriate array of products and food technologies.

Program:

Viable Communities and Appropriate Quality of Life for Individuals and Families

Goals:

- Food and food processing establishments will use safe food handling practices that safeguard public health.
- Nebraskans will have more healthful eating and activity behaviors that may reduce health care costs.
- Community leaders will be confident in their decision-making roles and help communities retain vitality.
- Youth will become informed decision makers and active community members and contribute to economic and family vitality.
- Communities will use available tools to strengthen their economic base; i.e., mentoring of entrepreneurs.
- Families will increase financial assets by reducing debts.

Program:

A Quality Environment and Effective Natural Resource Management

Goals:

- Nebraskans will have the appropriate technologies to manage and protect limited water supplies.
- Nebraska livestock producers will have and adopt the appropriate practices to manage livestock manure in ways that protect the environment and are economically feasible.
- Nebraska's soil and range resources will be managed to enhance the quality of the resource and sustain crop and livestock production.
- Inventories of Nebraska's natural resources will effectively serve the needs of resource managers and policy makers.
- Nebraskans will be able to adapt to and manage environmental change and assure the appropriate protection of forestry, aquatic, wildlife and other natural resources.

Gary Cunningham  
Dean and Director

## Recognition of Junior Faculty for Excellence in Research

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In 1991, the ARD Advisory Council established a program to recognize the research accomplishments of junior faculty members. Typically, two junior faculty are recognized each year. The recognition consists of a certificate, engraved plaque, and \$3,000 for professional development or research-related activities.

Criteria used to evaluate nominees include scientific publication record, especially those publications resulting from research at UNL, external grant funding, and recognition by peers. A sub-committee of the ARD Advisory Council evaluates the nominations and recommends recipients to the Dean for Agricultural Research.

The following faculty were selected for recognition during the 2007-2008 academic year:

**Dr. Mark A. Pegg**, Assistant Professor, School of Natural Resources

**Dr. Greg A. Somerville**, Assistant Professor, Veterinary and Biomedical Sciences

Congratulations to Drs. Pegg and Somerville! A call for nominations is issued each year on or about July 1<sup>st</sup>. We encourage faculty and administrators to nominate deserving junior faculty in their units.

## HARDIN DISTINGUISHED GRADUATE FELLOWSHIP 2007-2008

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The recipients of the Hardin Distinguished Graduate Fellowship for 2007-2008 are **Desalegn Debelo Serba** and **Tejinder Kumar Mall** from the Agronomy and Horticulture Department. This fellowship is made possible by an endowment established at the University of Nebraska Foundation by former University of Nebraska Chancellor Clifford Hardin to support outstanding graduate students doing research in plant physiology. They will receive a \$2,000 supplement to their graduate assistantship and the Agronomy and Horticulture Department will receive \$2,000 of operational support for their research programs.

**Desalegn Debelo Serba** is completing his Ph.D. dissertation involving "genetic linkage mapping and genetic basis of chinch bug resistance in diploid buffalograss." Desalegn is working with a diploid population derived from heterozygous parents. His research will set the framework for a genetic linkage map based on genome regions most responsible for the chinch bug resistance. His adviser is Robert Shearman.

**Tejinder Kumar Mall** is completing his Ph.D. dissertation dealing with "finding mechanisms controlling stress response in plants and to check their expression in sorghum." Tejinder is working to qualify the variability of cold tolerance in commercial hybrid seed lots, inbred lines and large-seeded inbreds under growth chamber conditions and to study the molecular basis for cold tolerance using a genomic and proteomic analysis. His adviser is Ismail Dweikat.

## SHEAR-MILES FELLOWSHIP 2007 - 2008

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The Shear-Miles Agricultural Scholarship and Fellowship was established at the NU Foundation with a \$173,000 gift from the estate of Dorothy S. Miles. James Dennis, executor of the Miles Estate, said Dorothy Miles planned that the gift memorialize her father and father-in-law, Corneilus Lott Shear and George Miles. Shear and Miles both graduated from the College of Agriculture at the University of Nebraska. Shear received his bachelor's and master's degrees in 1887 and 1901 and Miles graduated in 1903. This endowed fund provides scholarships and fellowships to benefit the Agricultural Research Division and the College of Agricultural Sciences and Natural Resources. Three students will be recipients of this \$2,000 award given by ARD:

Name: Yousef Hassan  
Thesis area: Human Nutrition/Molecular-Biochemical Nutrition  
Department: Nutrition and Health Sciences  
Adviser: Janos Zempleni

Name: Zhaoning Liang  
Thesis area: Climatology  
Department: School of Natural Resources  
Adviser: Steve Hu

Name: Analiza Alves  
Thesis area: Applied Entomology  
Department: Entomology  
Adviser: Blair Siegfried

## AL MOSEMAN INTERNATIONAL STUDIES FUND 2007-2008

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The Al Moseman International Studies Fund was established through a trust in the University of Nebraska Foundation. This fund supports students with the potential to contribute to international development. The U.S. role in technical assistance in future international agricultural development programs requires leadership in identifying and creating initiatives to achieve cooperation among multidisciplinary team members and to surmount traditional precedents in host country scientific and administrative procedures. This award is designated for graduate students in the Agronomy Graduate Program with interests in international agriculture and world food development. Preference will be given to students who are working in plant breeding and genetics.

The recipient of this \$2,500 award through the Agricultural Research Division and the College of Agricultural Sciences and Natural Resources is:

Name: Zakaria Ibrahim Al Ajlouni  
Thesis area: Plant Breeding and Genetics  
Department: Agronomy and Horticulture  
Adviser: Stephen Baenziger

## JOHN AND LOUISE SKALA FELLOWSHIP 2007 - 2008

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The John and Louise Skala Fellowship was established at the NU Foundation. Fifty percent (50%) of the net income of this Fund shall be used annually or otherwise for one or more fellowships awarded to full-time graduate students in the Institute of Agriculture and Natural Resources (IANR), University of Nebraska–Lincoln. The recipient of this Fellowship shall be engaged in research in areas relating to the new industrial uses of agricultural products. This fellowship provides a \$3,000 stipend to master's students and a \$5,000 stipend to doctoral students.

Seven students are the recipients of this award through the Agricultural Research Division and the College of Agricultural Sciences and Natural Resources:

Name:	Jolene M. Kelzer
Thesis area:	Ruminant Nutrition/Dairy Nutrition
Department:	Animal Science Department
Adviser:	Paul Kononoff
Name:	Shah N. Huda
Thesis area:	Agriculture and Biological Systems Engineering
Department:	Biological Systems Engineering
Adviser:	Yiqi Yang
Name:	Govindarajan Suresh Babu
Thesis area:	Agriculture and Biological Systems Engineering
Department:	Biological Systems Engineering
Adviser:	Milford Hanna
Name:	Ajay Kumar
Thesis area:	Engineering
Department:	Biological Systems Engineering
Adviser:	Milford Hanna
Name:	Heartwin Amaladhas Pushpadass
Thesis area:	Biological Engineering
Department:	Biological Systems Engineering
Adviser:	Milford Hanna
Name:	Eric C. Newgard
Thesis area:	Engineering
Department:	Biological Systems Engineering
Adviser:	Curtis Weller
Name:	Weijie Xur
Thesis area:	Textiles Science
Department:	Textiles, Clothing and Design
Adviser:	Yiqi Yang

## WIDAMAN TRUST DISTINGUISHED GRADUATE ASSISTANT AWARD 2007-2008

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The Widaman Trust was established in 1975 through a generous gift provided to the University of Nebraska Foundation by Ms. Blanch Widaman. Ms. Widaman asked that the income from the trust be used by UNL for basic research in agriculture and the funds support people rather than purchase supplies and/or equipment. She suggested that the money be used for scholarships or fellowships for graduate students conducting basic research in agriculture.

The criteria established for the Widaman Trust Distinguished Graduate Assistant Award specifies that only 5 percent of the graduate students in a department can receive the recognition and that the awardees must demonstrate outstanding scholarship and excellence in research. We congratulate the following graduate students for receiving the Widaman Trust Distinguished Graduate Student Award.

Name:	Juan Pablo Sesmero
Thesis area:	Agricultural Economics
Department:	Agricultural Economics
Adviser:	Lilyan Fulginiti
Name:	Charles J. Schmid
Thesis area:	Agronomy
Department:	Agronomy and Horticulture
Adviser:	Roch Gaussoin
Name:	José L. Aponte-Rivera
Thesis area:	Plant Breeding and Genetics
Department:	Agronomy and Horticulture
Adviser:	George Graef
Name:	Neway Mengistu
Thesis area:	Plant Breeding and Genetics
Department:	Agronomy/Horticulture
Adviser:	P. Stephen Baenziger
Name:	Jared S. Bates
Thesis area:	Animal Science
Department:	Animal Science
Adviser:	Rodger Johnson
Name:	Makram Geha
Thesis area:	Animal Breeding and Genetics
Department:	Animal Science
Adviser:	Dale Van Vleck
Name:	Mahmoud K. Masa'deh
Thesis area:	Poultry Nutrition
Department:	Animal Science
Adviser:	Sheila Scheideler

Name: Navasona Krishnan  
Thesis area: Biological Chemistry  
Department: Biochemistry  
Adviser: Donald Becker

Name: Andre LB Crespo  
Thesis area: Entomology  
Department: Entomology  
Adviser: Blair D. Siegfried

Name: Joseph L. Baumert  
Thesis area: Food Science and Technology  
Department: Food Science and Technology  
Adviser: Stephen L. Taylor

Name: Jenny V. Burmudez  
Thesis area: Food Science  
Department: Food Science and Technology  
Advisers: John Rupnow and Harshavardhan Thiparreddi

Name: Karina R. Lora  
Thesis area: Nutrition  
Department: Nutrition and Health Sciences  
Adviser: Nancy Lewis

Name: Elliot D. Jesch  
Thesis area: Nutrition  
Department: Nutrition and Health Sciences  
Adviser: Timothy Carr

Name: Giane M. Yanai  
Thesis area: Plant Pathology  
Department: Plant Pathology  
Adviser: James Van Etten

Name: Florencia Meyer  
Thesis area: Virology  
Department: School of Biological Sciences  
Adviser: Clinton Jones

Name: Ty W. Matthews  
Thesis area: Natural Resources  
Department: School of Natural Resources  
Adviser: Larkin Powell and Andrew Tyre

Name: Kazima Saira  
Thesis area: Integrated Biomedical Sciences  
Department: Veterinary and Biomedical Sciences  
Adviser: Clinton Jones

## New or Revised Projects May and June 2007

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### **NEB 21-137 Integrated soil sensing for site-specific crop management**

*Investigator:* Slava Adamchuk, Biological Systems Engineering  
*Status:* Hatch project effective Apr. 1, 2007, through Mar. 31, 2012

### **NEB 22-322 Developing small grains cultivars and systems optimally suited for organic production**

*Investigator:* Steve Baenziger, Agronomy and Horticulture  
*Status:* NRI Grant project effective Aug. 1, 2007, through July 1, 2011

### **NEB 22-323 Plant-animal interactions in response to grazing system on Sandhills prairie**

*Investigator:* Walter Schacht, Agronomy and Horticulture  
*Status:* Hatch project effective June 1, 2007, through May 31, 2012

### **NEB 22-324 NC-506, Sustainable biorefining systems for corn in the North Central Region**

*Investigator:* Ken Cassman and Richard Perrin, Agronomy and Horticulture  
*Status:* Multistate project effective Jan. 1, 2007, through Sept. 30, 2008

### **NEB 28-088 The ecology of carcass decomposition in terrestrial ecosystems**

*Investigator:* David Carter, Entomology  
*Status:* Hatch project effective June 1, 2007, through May 31, 2012

### **NEB 28-090 Isolation and characterization of novel cellulose digesting enzymes**

*Investigator:* Blair Siegfried, Entomology  
*Status:* Interdisciplinary project effective July 1, 2007, through June 30, 2009

### **NEB 38-052 Physiological effects of drought stress-responsive transgenes in soybean**

*Investigator:* Tala Awada, School of Natural Resources  
*Status:* Hatch project effective July 1, 2007, through June 30, 2009

## Proposals Submitted for Federal Grants May and June 2007

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The following is a listing of proposals that were submitted during May and June 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.

**Julie Stone** – NATO – Understanding reactive oxygen species' role in plant stress responses – \$5,440

**Stevan Knezevic and David Olson** – USDA-PREISM – Decision support system to aid in predicting purple loose-stripe occurrence and evaluating control measures – \$189,475

**Julia Torquati, Helen Raikes and Carolyn Edwards** – Administration for Children and Families – Evaluation of a regio-inspired intervention to enhance school readiness of Head start/Early Head Start ELL children and families – \$499,962

**Thomas Powers** – NSF-University of Vermont – Nematodes of the rain forests of Costa Rica – \$68,094

**Joseph Barycki** – NIH – Structural insights into redox homeostasis – \$196,471

**Milford Hanna, David Jones and Lijun Wang** – N. C. Sun Grant Center – Investigation of an integrated fluidized bed gasified and fuel cell system for combined heat and power generation from distillers grain and corn stove – \$1,138,949

**Alan Baquet** – USDA/University of Missouri-Columbia – Rural Research Policy Institute – \$5,058

**Rhae Drijber** – NSF-Colorado State University – Vulnerability of soil organic matter to temperature changes: Exploring constraints due to substrate decomposability and microbial community structure – \$7,199

**Anatoly Gitelson** – NASA – Land cover land use change effects on surface water quality – \$50,000

**Yiqi Yang and Narendra Reddy** – USDA/CSREES – Regenerative protein fibers from canola meal for textile and biomedical applications – \$229,874

**Xun-hong Chen, Ashok Samal-Lead, A. Tomkins, S. Zellmer and L. Soh** – NSF – U.S./China digital government collaboration: Building a collaboratory in hydro-informatics and water policy – \$49,716

**Ji-Young Lee** – NIH – Role of ABC transporters in high-density lipoprotein metabolism in obesity – \$1,867,297

**Raul Barletta** – NIH – High throughput screen for mycobacterium tuberculosis D-alanine ligase inhibitors – \$206,249

**Kaye Stanek-Krogstrand** – NRI-University of Nevada-Reno – Family resiliency in obesogenic environments – \$9,000

**Stephen Baenziger** – USDA-ARS – Developing winter wheat with improved fusarium head blight tolerance by conventional and transgenic approaches – \$306,981

**Jae Ryu, Mark Svoboda, Cody Knutson and Meghan Sittler** – NASA-ROSES – Developing a predictive capability decision support system for drought mitigation – \$345,000

**Ruma Banerjee** – NIH – Regulation of methionine dependent redox homeostasis – \$282,119

**Alexander Pavlista** – USDA-CSREES-KSU – Development and management of canola in the Great Plains – \$7,500

**Melanie Simpson** – NIH – Role of hyaluronan matrix in prostate cancer progression – \$205,583

**Gary Hein** – USDA-ARS – Areawide pest management program for Russian wheat aphid and greenbug: Colorado – \$91,000

**Robert Wilson** – USDA IR4-KSU – Thifensulfuron + Rimsulfuron/chicory (roots) PR#09417 – \$4,500

**Mark Svoboda, Brian Wardlow, Brian Fuchs, and Soren Scott** – NASA-ROSES – Integrating enhanced GRACE water storage data into the U.S. and North American drought monitors – \$224,991

**Stephen Baenziger and Stephen Wegulo** – USDA-ARS – Developing winter wheat with improved fusarium head blight tolerance by conventional and transgenic approaches – \$46,378

**Anatoly Gitelson, Shashi Verma and Andrew Suyker** – NASA-ROSES – A satellite-based quantification of carbon exchange of the dominant ecosystem (maize-soybean) in the NACP Mid-Continent Intensive (MCI) Region – \$599,483

**Robert Hutkins, Andrew Benson, Steve Taylor, Jens Walter, Lloyd Bullerman, Harshavardhan Thippareddi, Richard Goodman and Vicki Schlegel** – USDA/CSREES – Ph.D. national needs fellowships in food safety and systems biology – \$229,500

**James Merchant and Milda Vaitkus** – U.S. Geological/America View – (Nebraska) State View Program Development – \$51,000

**Janos Zempleni** – NIH – Biotin sensing and chromatin remodeling by holocarboxylase synthetase – \$1,180,000

**Donald Becker** – NIH – Mechanistic studies of functional swinging in the PutA flavoprotein – \$41,628

**Mark Wilson** – NIH – Structural basis of DJ-1 function in Parkinson's disease – \$1,367,895

**Gary Yuen** – USDA-ARS – Enhancing biological strategies to control fusarium head blight and evaluating biological control agents in uniform tests against FHB – \$36,976

**Cody Hollist and Miguel Carranze (lead)** – NSF – The impact of immigration raids on individuals, families and the community in a rural midwestern town – \$172,827

**Daniel Duncan** – USDA/Foreign Agricultural Service – Egypt Biosafety Project Field Trail Inspection Workshop – \$49,907

**Jens Walter and Sheila Scheideler** – USDA-NRI – A metagenomic analysis of the gastrointestinal microbiota of chicken – \$342,853

**Alex Pavlista, Gary Hergert and Drew Lyon** – USDA-NRI – Managing limited irrigation supplies on winter canola under semi-arid conditions – \$221,125

**Paul Kononoff** – USDA-NRI – Development of bioequivalent and sustainable dairy rations containing corn milling co-products – \$324,396

**Richard Perrin and Lilyan Fulginiti** – USDA-NRI – Alternative ethanol technologies: Welfare and land use implications – \$318,686

**Raul Barletta and Andrew Benson** – USDA-NRI – Genomic wide analysis of micobacterium avium subsp. paratuberculosis interaction with bovine macrophages – \$708,724

**Blair Siegfried** – USDA-NRI – Identification and validation of midgut-specific target sites for control of the western corn rootworm – \$497,967

**Azzeddine Azzam** – USDA-NRI – Multi-stage production and farm structure: The case of U.S. hog farms – \$57,809

**Andrew Benson** – USDA-NRI – Divergence of gene expression pathways in listeria monocytogenes – \$756,444

**Roy Spalding, Mary Spalding, Richard Ferguson and David Marx** – USDA-NRI – Effectiveness of irrigated crop management practices in reducing groundwater nitrate contamination – \$450,000

**James Alfano, Thomas Clemente, Paul Staswick, Julie Stone and Thomas Morris** – USDA – Food and Agricultural Sciences National Needs Graduate and Postdoctoral Fellowship Grants Program – \$252,000

**Robert Joeckel** – USGS – Inventory of geologic data for Nebraska – \$5,000

**Dong Wang** – NIH – Novel statistical methods for modeling epigenetic modifications – \$139,728

**Vicki Schlegel, Curtis Weller, Susan Cuppett, Tim Carr, David Jackson, Lijun Wang and Mark Hutchison** – EDA, Department of Commerce – Characterization of cholesterol lowering lipids in damaged dry edible beans – \$263,000

**Alexander Pavlista** – NCR-SARE – Improving direct harvest of dry bean using biggerellic acid – \$136,000

**Israrul Ansari** – NIH – Role of N-linked glycosylation of GP-1 in modulation of immune response in LCMV – \$362,250

**Asit Pattnaik** – NIH – Replication of a negative-strand RNA virus in yeast – \$380,216

**Charles Francis** – NCR-SARE – Production and economic sustainability of peri-urban farming – \$149,421

**Charles Francis** – NCR-SARE – Optimal organic crop rotations with out-of-sample decision tools – \$149,821

**Harshavardhan Thippareddi** – USDA-FAS – Post harvest management/cold chain operations - India – \$1,967

**Charles Francis** – NCR-SARE – Agility of small farms to adjust to the new market economics – \$150,000

**Vadim Gladyshev** – NIH – Selenoproteins as targets for cancer prevention – \$269,445

**Asit Pattnaik** – NIH – Replication and assembly of vesicular stomatitis virus – \$1,771,289

**Jennifer Wood** – Department of the Army-USAMRAA – Estrogen receptor dependent regulation of Nek2 gene expression: Does Nek2 act as a mediator between estrogen and the centrosome in breast cancer cells – \$425,606

**Jens Walter, Stephen Taylor and Phillip Miller** – NIH – A metagenomic exploration of the gut microbiome to identify bacterial systems for the removal of toxic gluten epitopes – \$393,225

**Thomas Hunt** – USDA-ARS – Contributions to a framework for managing insect resistance to transgenic crops – \$15,000

**Vadim Gladyshev** – NIH-General Medicine – Identity and functions of selenoprotein genes – \$276,444

**Marjorie Lou** – NIH – The role of protein-thiol mixed disulfides in cataractogenesis – \$2,634,463

**David McVey and David Steffen** – USDA/CSREES – Diagnostic systems for phenotypic characterization of dangerous bacterial pathogens – \$102,500

**Brett White** – NIH – Transcriptional regulation of the type II GnRH receptor gene – \$144,900

## IANR Research Travel Grants

The IANR Research Travel Program has been in existence for 12 years. Funds are granted quarterly on a competitive basis. Faculty with IANR research appointments are eligible to apply for these travel grants. The grants allow faculty to travel to present original scholarly work at professional and scholarly meetings. Faculty members are limited to one travel grant per fiscal year. The next deadline for applications is: **Sept. 1.**

## Grants and Contracts Received for May and June 2007

### Agricultural Economics:

Miscellaneous grants under \$10,000 each \$5,058.00

### Agronomy and Horticulture:

**Stephen Baenziger** – USDA-NRI \$755,937.00

**Ken Cassman, Haishun Yang, Suat Irmak,  
David Tarkalson, William Kranz, Charles Shapiro,  
Achim Dobermann, and Daniel Walters** –

NCRS-Nebraska Corn Board \$230,537.00

**Robert Shearman** – Todd Valley Farms \$16,000.00

Miscellaneous grants under \$10,000 each \$145,319.00

### Animal Science:

**Chris Calkins** – Nebraska Beef Council \$72,696.00

Miscellaneous grants under \$10,000 each \$14,540.00

### Biochemistry:

**Ruma Banerjee** – NIH-NIDDKD \$282,119.00

**Joseph Barycki** – NIH \$196,471.00

**Donald Becker** – NIH \$41,628.00

**Donald Becker** – NIH \$297,863.00

**Vadim Gladyshev** – NIH \$269,445.00

**Vadim Gladyshev** – NIH-General Medicine \$276,444.00

**Stephen Ragsdale** – Department of Energy \$130,000.00

**Melanie Simpson** – NIH \$205,583.00

**Melanie Simpson** – American Heart Association \$143,000.00

### Entomology:

**Lance Meinke** – Monsanto \$25,000.00

**Lance Meinke** – Pioneer \$46,078.00

**Robert Wright** – Syngenta Crop Protection \$19,000.00

Miscellaneous grants under \$10,000 each \$33,000.00

### Food Science and Technology:

Miscellaneous grants under \$10,000 each \$11,427.00

### Nebraska Rural Initiative:

**Sandra Scofield** – Department of Housing  
and Urban Development \$99,000.00

**Sandra Scofield** – Department of Housing  
and Urban Development \$198,000.00

### Northeast Research and Extension Center:

**Stevan Knezevic** – Propane Education  
and Research Council \$101,409.00

Miscellaneous grants under \$10,000 each \$37,600.00

### Panhandle Research and Extension Center:

**Gary Hein** – USDA-ARS \$91,000.00

**Gary Hein** – Syngenta Crop Protection \$10,000.00

Miscellaneous grants under \$10,000 each \$91,400.00

### Plant Pathology:

**Thomas Powers** – NSF-University of Vermont \$68,094.00

Miscellaneous grants under \$10,000 each \$80,910.00

### Plant Science Initiative:

Miscellaneous grants under \$10,000 each \$5,440.00

### School of Natural Resources:

**Craig Allen** – Nebraska Environmental Trust \$105,642.00

**Anatoly Gitelson** – NASA \$50,000.00

**Paul Hanson and Matt Joeckel** – USGS \$68,053.00

**Kyle Hoagland** – National Park Service \$28,000.00

**Mark Pegg** – Nebraska Environmental Trust \$55,050.00

**Larkin Powell and Richard Tyre** – NRCS \$70,935.00

**Larkin Powell and Richard Tyre** – Nebraska Game  
and Parks Commission \$65,084.00

**Donald Rundquist** – Nebraska Department of  
Environmental Quality \$42,902.00

Miscellaneous grants under \$10,000 each \$20,000.00

### Veterinary and Biomedical Sciences:

**David Steffen** – Nebraska Game and Parks  
Commission \$135,000.00

### Water Center:

**Kyle Hoagland** – Nebraska Department  
of Natural Resources \$1,500,000.00

**Kyle Hoagland** – USGS \$92,335.00

### West Central Research and Extension Center:

Miscellaneous grants under \$10,000 each \$10,700.00

**TOTAL:** \$6,243,699.00