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December 2004

# Agricultural Research Division News - December 2004

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## Agricultural Research Division News



Office of the Dean, 207 Ag Hall, P.O. Box 830704, Lincoln, NE 68583-0704, Phone (402) 472-2045, FAX (402) 472-9071

December 2004

Volume 37, Number 6

### Comments from the Dean



Dear Colleagues:



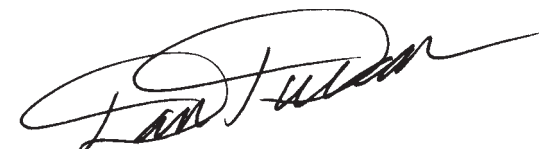



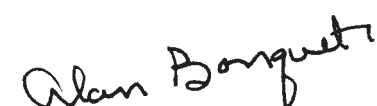

The ARD office staff extend our best wishes to you and your family for a happy holiday season and great 2005. We hope that the holiday break will be a time of rest, reflection and renewal as you prepare for a new calendar year.

Our comments in the December 2003 issue of **ARD News** expressed the hope that IANR would return to some semblance of "normal operations" during 2004. We believe that 2004 was an excellent year in many respects. Producers have realized excellent yields and increased profitability during the past year. State revenues are coming in above projection for the first time in three years and IANR has not been subjected to significant budget reductions. In addition, many our faculty achieved great success in their research projects, including the significant increases in external grant funding. We should be thankful for all of the positive things that happened during the past year.

Although IANR continues to have challenges, including a need to increase undergraduate enrollment, we are confident that ARD faculty will continue to carry out their research, teaching and extension education duties with dedication and excellence. The people of Nebraska value our programs that address their immediate problems and increase the quality of their lives, and I am certain that this support will continue into the future.

Thanks for all of the cooperation and support that each of you provided to the ARD office during 2004. We appreciate your understanding and assistance and look forward to serving you in 2005.

The ARD Office Staff:



It is the policy of the University of Nebraska-Lincoln not to discriminate on the basis of gender, age, disability, race, color, religion, marital status, veteran's status, national or ethnic origin or sexual orientation.



## Strategic Planning in IANR

The Institute of Agriculture and Natural Resources has a history of engaging in strategic planning efforts. The most recent of these efforts was initiated in the spring of 2002 and culminated with the adoption of a document entitled "Strategic Plan for the Institute of Agriculture and Natural Resources" by the IANR Vice Chancellor's Council in September 2004. This document is available on the IANR Web site. ([www.IANR.unl.edu](http://www.IANR.unl.edu)) Significant efforts were made during this most recent process to gather input from a wide variety of sources. Thirty listening sessions with over 700 constituents were conducted across the state of Nebraska. Several faculty forums were held for faculty at several locations across the state, including each research and extension center location. Throughout all of this, two significant issues arose: 1) economic development and community vitality and 2) water, both quantity and quality.

These issues are not totally new to faculty in IANR. Certainly faculty with ARD appointments have been involved in a variety of research related to water quality and water usage efficiency, and that research will be continuing. Similarly, economic development has been an important research and extension education focus for some of our faculty as well. However, given the strong expressions of concern about these two areas, we would expect to see an increasingly important emphasis on research and education in these two areas.

More recently, Chancellor Harvey Perlman has announced a process for the development of a UNL strategic plan. This process will be led by Senior Vice Chancellor for Academic Affairs Barbara Couture and IANR Vice Chancellor John Owens. The process will begin at the unit level. Unit plans will be shared with the IANR Dean's Council as part of the unit planning sessions that will begin in January 2005. The unit plans will form the basis for IANR's contribution to the UNL-wide strategic plan. Units in IANR will be asked to identify a relatively small number of high priority areas and their plans for achieving excellence in these areas. In addition, most units will be asked to identify their contributions to five campus-wide initiatives. The campus-wide initiatives are: Climate Impact Plans, Space and Equipment Priority Needs, Hiring Priorities and Rationale, Enrollment Management Plans and Diversity Plans.

It is expected that units will integrate their research, teaching, extension education and service functions in the plans that are put forward. The IANR Dean's Council will assess the contributions of each unit's plans to the core values identified for UNL and the priority areas for IANR as identified in the Strategic Plan for the Institute of Agriculture and Natural Resources dated September 2004. With appropriately developed strategic plans, we will be well-positioned to continue to have responsive and relevant research programs within IANR.

## Final FY 2005 Appropriation for USDA-CSREES

Recently, Congress passed and President Bush signed the omnibus appropriations bill for FY 2005. Included in this bill was the appropriation for USDA-CSREES. All domestic spending programs were automatically reduced by 0.83 percent to assist with the budget deficit. As compared to FY 2004, there were significant increases in state-specific special grants, the National Research Initiative, Minor Crop Pest Management (IR-4), Water Quality, Food Safety and Homeland Security. All other research programs were level funded or had a slight reduction. Overall, research and higher education programs increased about \$38 million and Integrated Activities increased about \$4.5 million.

Program	FY2004 Enacted	FY2005 Final
----- \$, thousands -----		
<b>Research:</b>		
Hatch Act	179,085	178,707
McIntire-Stennis Forestry	21,755	22,205
Evans-Allen Program	35,788	36,704
Animal Health and Disease	5,098	5,057
National Research Initiative	164,027	179,552
Special Research Grants	110,655	120,314
Improved Pest Control	13,594	15,158
Canola - Alternative Crop	752	0
Critical Ag Materials Act	1,111	0
Hesperaloe - Alter. Crop	311	1,102
1994 Institutions	1,087	1,078
Joe Skeen Rangeland	895	992
Sustainable Agriculture	12,222	12,400
Aquaculture Centers	4,000	3,968
Federal Administration	37,482	42,546
<b>Total</b>	<b>588,097</b>	<b>619,783</b>
<b>Higher Education:</b>		
Institution Challenge Grants	4,859	5,456
Graduate Fellowships	2,883	2,976
Multiculture Scholars	986	990
1890 Capacity Building	11,411	12,312
Hispanic Educ. Partnership	4,645	5,600
1994 Institutions	1,679	2,232
Alaska/Hawaii Institutions	3,131	3,482
Secondary Ag Education	880	992
<b>Total</b>	<b>29,683</b>	<b>34,040</b>
<b>Integrated Activities:</b>		
Critical Issues - Disease	444	744
Rural Develop. Centers	1,353	1,334
Water Quality	11,530	12,867
Food Safety	13,305	14,847
Pest Impact Assess.	4,028	4,166
Int. Science Education	895	1,000
Crops at Risk - FQPA	1,330	1,497
FQPA Risk Mitigation	4,345	4,889
Methyl Bromide Trans.	3,131	2,498
Organic Transition	1,889	1,889
Homeland Security	7,953	18,000
<b>Total</b>	<b>50,195</b>	<b>63,731</b>

## Undergraduate Honors Research Program

Funds for the FY 2004-2005 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 four were funded. The following students have received funding:

**Joshua Thoendel** (Biochemistry Department) \$2,500  
Mentor: Dr. Robert Spreitzer  
"Analysis of Post-Translational Modifications in Ribulose 1, 5-Biphosphosphate Carboxylase/Oxygenase via Biochemical and Genetic Methods"

**Chandra Ruff** (Agricultural Economics Department) \$2,200  
Mentor: Dr. Wes Peterson  
"Promoting Sustainable Development: An Analysis of the Timber Industries in Brazil and Indonesia Using the Solow Growth Model"

**Jesse L. Cox** (Biochemistry Department) \$2,500  
Mentor: Dr. Jackwon Lee  
"Understanding the Function and Role of MCTR2, A Mammalian Copper Transporter"

**Brady Brabec** (Biochemistry Department) \$2,500  
Mentor: Dr. Steven Ragsdale  
"Characterization of Basic Residues Near the Active Site in CO Dehydrogenase"

## IANR Policy for Conducting Field Trials of Regulated Transgenic Material

Faculty interest and activity in conducting field trials with regulated transgenic material has necessitated development of a policy to guide these activities within IANR. The policy statement will help faculty understand and work through a maze of policies and regulations governing this activity.

The policy was developed by an internal committee consisting of: Anne Vidavar — chair, Tom Clemente, George Graef, Steve Baenziger, Jeff Noel, Mike Fromm and Dan Duncan. Andy Benson, Jill Hyslop-Bohling, Turan Odabasi, Judy Roots and others also provided technical comments.

The policy draws heavily from a policy developed by the National Agricultural Biotechnology Council (NABC) of which UNL is a member. The ARD policy may be modified as NABC recommendations evolve.

The policy can be accessed via the ARD Web site at: <http://www.ard.unl.edu/>

(Under the "For ARD Scientists and Staff" option, then the "Policies" option)

## David H. and Annie E. Larrick Fund, 2005

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:* Eric Mousel  
*Department:* Agronomy and Horticulture Department  
*Meeting:* International Grassland Congress Meeting  
*Place:* Dublin, Ireland

*Name:* Aaron Waltz  
*Department:* Agronomy and Horticulture Department  
*Meeting:* Weed Science Society of America Meeting  
*Place:* Honolulu, Hawaii

*Name:* Nagarama Kothapalli  
*Department:* Biochemistry Department  
*Meeting:* Experimental Biology, American Society of Nutritional Sciences Meeting  
*Place:* San Diego, California

*Name:* Jeffrey T. Krumm  
*Department:* Entomology Department  
*Meeting:* North Central Branch of Entomology Society of America Meeting  
*Place:* West Lafayette, Indiana

*Name:* Pete Clark  
*Department:* Entomology Department  
*Meeting:* North Central Branch of Entomology Society of America Meeting  
*Place:* West Lafayette, Indiana

*Name:* Wyatt G. Anderson  
*Department:* Entomology Department  
*Meeting:* Natural Turfgrass Entomology Meeting  
*Place:* Biloxi, Mississippi

*Name:* Benjawan Siriwetwivat  
*Department:* Entomology Department  
*Meeting:* Entomological Society of America Meeting  
*Place:* Ottawa, Ontario, Canada

*Name:* Subhashinee S.K. Wijeratne  
*Department:* Food Science and Technology  
*Meeting:* American Oil Chemists Society Annual Meeting  
*Place:* Salt Lake City, Utah

*Name:* Elliott D. Jesch  
*Department:* Nutrition and Health Sciences  
*Meeting:* Experimental Biology Society of Nutritional Sciences Meeting  
*Place:* San Diego, California

*Name:* Gabriela Camporeale  
*Department:* Nutrition and Health Sciences  
*Meeting:* Experimental Biology Society of Nutritional Sciences Meeting  
*Place:* San Diego, California

*Name:* Karina Lora  
*Department:* Nutrition and Health Sciences  
*Meeting:* Experimental Biology Society of Nutritional Sciences Meeting  
*Place:* San Diego, California

*Name:* Camile Semighini  
*Department:* Entomology  
*Meeting:* Entomology Society of America Annual Meeting  
*Place:* Salt Lake City, Utah

*Name:* Melissa Melvin  
*Department:* School of Natural Resources  
*Meeting:* American Meteorological Society Meeting  
*Place:* San Diego, California

## **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. Nine students applied for the travel award, and these nine IANR students received William G. Whitmore Memorial Funds for travel during the period Jan. 1 through June 30, 2005, as follows:

*Name:* Amy Boren  
*Department:* Agricultural Leadership, Education and Communication  
*Meeting:* Hawaii International Conference on Education  
*Place:* Honolulu, Hawaii

*Name:* Matt Luebbe  
*Department:* Animal Science Department  
*Meeting:* American Society of Animal Science/ Midwestern  
*Place:* Des Moines, Iowa

*Name:* Sarah Morris  
*Department:* Animal Science Department  
*Meeting:* American Society of Animal Science/ Midwestern  
*Place:* Des Moines, Iowa

*Name:* L. Aaron Stalker  
*Department:* Animal Science Department

*Meeting:* Western Section/ American Society of Animal Science  
*Place:* Las Cruces, New Mexico

*Name:* Jennifer McDonald  
*Department:* Animal Science Department  
*Meeting:* American Society of Animal Science/ Midwestern  
*Place:* Des Moines, Iowa

*Name:* Kimberly M. Hargrave  
*Department:* Animal Science Department  
*Meeting:* American Society for Nutritional Sciences  
*Place:* San Diego, California

*Name:* Robin A. Ten Broeck  
*Department:* Animal Science Department  
*Meeting:* American Society of Animal Science/ Midwestern  
*Place:* Des Moines, Iowa

*Name:* Joshua Benton  
*Department:* Animal Science Department  
*Meeting:* American Society of Animal Science/ Midwestern  
*Place:* Des Moines, Iowa

*Name:* Chao-Wei Chen  
*Department:* Veterinary and Biomedical Sciences  
*Meeting:* Association for Research in Vision and Ophthalmology  
*Place:* Fort Lauderdale, Florida

The next call for these travel funds will be sent to the unit administrators around the second week in April 2005 for travel from July 1 to Dec. 31.

## **New or Revised Projects October/November 2004**

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The following station projects were approved recently by the USDA Current Research Information System (CRIS):

**NEB-16-104, HACCP assistance for small and very small processors with development and validation of safe meat chilling processes**  
*Investigator:* Harshavardhan Thippareddi (Food Science and Technology)  
*Status:* Grant effective Sept. 15, 2004

**NEB-40-030, Developing drought mitigation and preparedness technologies for the United States**  
*Investigator:* Donald Wilhite (School of Natural Resources)  
*Status:* Special Grant effective July 1, 2004

**NEB-14-133, Analyses of virulence and attenuation determinants of porcine reproductive and respiratory syndrome virus using reverse genetics approach**  
*Investigator:* Asit Pattnaik (Veterinary and Biomedical Sciences)  
*Status:* Competitive Grant effective Sept. 1, 2004

**NEB-12-305, The genetic basis of agronomic traits controlled by chromosome 3A in wheat**  
*Investigator:* P.S. Baenziger (Agronomy/Horticulture)  
*Status:* NRI Grant effective July 15, 2004

**NEB-16-105, Evaluation of natural compounds (nutraceuticals) bioavailability and antioxidant activity in Caco-2 Cell model system**

*Investigator:* Susan Cuppett (Food Science and Technology)

*Status:* Hatch effective Sept. 1, 2004

**NEB-15-109, Mammalian copper transporters and systemic copper homeostasis**

*Investigator:* Jaekwon Lee (Biochemistry)

*Status:* Hatch effective Oct. 1, 2004

**NEB-40-035, NC-1018, Impact of climate and soils on crop selection and management**

*Investigator:* Ken Hubbard (School of Natural Resources)

*Status:* Multistate project effective Oct. 1, 2004

**NEB-42-030, Management causes of variation in the lean-to-finish growth process in pigs**

*Investigator:* Michael Brumm (Northeast Research and Extension Center)

*Status:* Hatch effective Nov. 1, 2004

**NEB-33-003, NC-1020, Beef cattle grazing systems that improve production and profitability while minimizing risk and environmental impacts**

*Investigator:* Terry Klopfenstein (Animal Science)

*Status:* Multistate project effective Oct. 1, 2004

**NEB-40-020, Development of optimal conjunctive use plans during irrigation seasons for Nebraska's River Valley**

*Investigator:* Xun-Hong Chen (School of Natural Resources)

*Status:* State project effective Oct. 1, 2002

**Proposals Submitted for Federal Grants — October-November 2004**

.....  
**Kyle Hoagland** — Water Resources Research Initiative Academic Program Enhancement — \$387,000

**Brett White** — NIH — Role of GnRH in early embryonic development — \$142,815

**Dean Eisenhauer, Bill Zanner and Scott Hygnstrom** — USGS Competitive (Seed) Grants Program — Beaver in agricultural watersheds: Potential for mitigating degraded midwestern streams — \$20,000

**Stephen Ragsdale, Jess Miner and James Takacs** — NSF — Enzymology of the first step in methanopterin biosynthesis — \$1,534,689

**Thomas Clemente** — NSF — VCA: Development of reverse genetics tools for soybean — \$5,044,502

**Brian Beecher** — USDA — Improving barley digestibility by modifying kernel texture — \$20,000

**Robert Harveson and Mohamed F R Khan** — USDA/CSREES — Novel techniques for managing sugar beet production in fields infested with the root pathogens *A. chochlioides* and *R. Solani*. — \$97,400

**James Van Etten, David Dunigan, Ming Kang, Yan Zhang, and I. Agarkova** — NIA — DNA replication and gene expression of chlorella viruses — \$1,825,000

**Jaekwon Lee** — NIH — Mammalian copper transport, homeostasis, and its defects — \$1,616,501

**You Zhou and Merlyn Nielsen** — NIH — Genes, behaviors, and aging in GR polymorphic mouse lines — \$400,125

**Ruma Banerjee** — NIH — Cystathionine beta-synthase and hyperhomocysteinemia — \$1,692,500

**James Alfano** — NSF — VCA functional genomics of the tomato-pseudomonas syringae interactome — \$1,003,534

**Blair Siegfried, Doug Sumerford and Tom Hunt** — NRI — Characterization of field-derived Bt resistance in the European corn borer — \$276,649

**James Swinehart and Ronald Goble** — NSF — Dunefield records of late quaternary climatic change, Northern China — \$87,579

**Drew Lyon** — USDA/CSREES — Managing imazamox-resistant wheat in crop rotations for control of jointed goatgrass in the Central Great Plains — \$7,500

**Alexander Pavlista** — USDA-CSREES — Potato varietal development — \$3,000

**Gerald Duhamel** — NIH — Polymicrobial associations in inflammatory bowel disease — \$141,768

**David Jones and Milford Hanna** — NSF — The role of nanoemulsions in enhancement of combustion characteristics and fuel physical properties of ethanol-biodiesel-diesel — \$337,403

**Ray Supalla** — USDA-ARS — Addressing water supply and environmental needs in the North Platte Basin with markets — \$72,600

**Julie Stone** — NRI — *In vivo* analysis of SBP protein-mediated gene expression in development and stress response — \$398,309

**Milford Hanna** — U.S. Department of Energy — Atmospheric low temperature biomass liquefaction and biorefining model — \$150,000

**Gail Wicks, David Tarkalson, and John Campbell** — North Central IPM — The influence of Roundup Ready corn and soybean on integrated pest management in crop rotations in the Central Great Plains — \$121,258

**James Van Etten, David Dunigan, and B. Kronschnabel** — NIH — Center for Innovation in Membrane protein production — \$761,801

**Tom Powers** — NSF — Species inventory of nematodes in tropical rain forests of Costa Rica — \$69,448

**Clinton Jones and Yange Zhang** — NRI — Functional analysis of bicPO, the major transcriptional regulatory gene of BHV-1 — \$349,500

**Scott Josiah** — SARE — High-value enterprises for small spaces: Accelerating commercialization and integration of woody florals and hybrid hazelnuts in sustainable systems — \$149,997

**Jozsef Szilagyi** — National Science Foundation — Identification of the triggering mechanisms of increased flood risk in the Lower Missouri River — \$59,022

**Shashi Verma** — U.S. Department of Energy — The 2005-06 budget of the Great Plains Regional Center of the NIGEC — \$1,268,660

**David Jackson** — INTSORMIL — Entrepreneurship and product development in East Africa: A strategy to promote increased use of sorghum and millet — \$105,000

**James Swinehart** — USGS — State map 2005/2006 — \$140,435

**James Alfano** — NRI — Functional genomics of the pathogenetic and epiphytic lifestyles of the bacterial plant pathogen *Pseudomonas syringae* — \$129,999

**Thomas Clemente** — National Science Foundation — Collaborative research: elucidation of the isolavonoid phytoalexin pathway in pea — \$100,095

**Han Asard** — NSF — Physiological functions and biochemical properties of plant cytochromes — \$386,084

**Han Asard** — NIH — Characterization of ascorbate-dependent cytochromes b561 — \$876,000



## Grants and Contracts Received October-November, 2004

<b>Agricultural Economics</b>	
Ray Supalla — USDA-ARS	\$33,600
<b>Agronomy/Horticulture</b>	
Dennis Diestler — NSF	300,000
Alexander Martin — USDA-ARS-NPA	15,000
Rhae Drijber — USDA-ARS	20,000
Susan Tunnell — U.S. Environmental Protection Agency	81,022
Lowell Moser — Agronomy Discretionary	7,389
Walter Schacht — Ralph Bainbridge Fund	4,775
Walter Schacht — Sampson Range Endowment	900
George Graef and Jim Specht — Nebraska Soybean Board	147,360
George Graef and Jim Specht — Nebraska Soybean Board	39,500
Achim Dobermann — Nebraska Soybean Board	28,640
Brian Beecher — USDA	20,000
Lenis Nelson — Nebraska Soybean Board	4,000
George Graef, Loren Giesler and Jim Specht — Nebraska Soybean Board	41,640
<b>Animal Science</b>	
Andrew Cupp — Branham Endowment	3,000
Rodger Johnson and Phil Miller — National Pork Producers Association	19,000
Daniel Pomp — NIH/NCI	120,000
Daniel Pomp — Biotechnology Research and Development Corp.	47,710
Don Beermann and Susan Fritz — Nebraska Beef Council	2,000
<b>Agricultural Research Division</b>	
Dan Duncan — Agro-Environmental Trail Coalition US EPA	30,791
<b>Biochemistry</b>	
Vadim Gladyshev — NIH	14,895
Melanie Simpson — NIH	209,090
Donald Becker — Branham Endowment	3,000
Don Weeks — Consortium for Plant Biotechnology Research, Inc.	116,000
<b>Center of Biotechnology</b>	
Thomas Clemente — United Soybean Board	100,300
<b>Biological Systems Engineering</b>	
Curt Weller, T. Carr, V. Schlegel, S. Cuppett, K. Hwang and L. Wang — USDA/CSREES	338,000
David Billesbach — U.S. Department of Energy	52,617
<b>Entomology</b>	
John Foster — Department of Agriculture	25,000
Lance Meinke — Syngenta Seeds, Inc.	15,000
Robert Wright — Syngenta Seeds, Inc.	24,000

<b>Food Science and Technology</b>	
Andrew Benson — U.S. Army Medical Research	100,000
<b>Institute of Agriculture and Natural Resources</b>	
John Owens — Cyril Bish Professorship	7,500
<b>Meat Animal Research Center</b>	
Darrell Nelson — USDA-ARS-NPA	300,000
<b>Northeast Research and Extension Center</b>	
Thomas Hunt and Leon Higley — Nebraska Soybean Board	29,405
Thomas Hunt and Stevan Knezevic — Nebraska Soybean Board	13,945
Thomas Hunt — Syngenta Seeds Inc.	6,000
Stevan Knezevic, Alex Martin and Bob Klein — Nebraska Soybean Board	34,635
<b>Panhandle Research and Extension Center</b>	
David Baltensperger — USDA	8,000
Alexander Pavlista — Subcontract with University of Minnesota — USDA-CSREES	3,000
Drew Lyon — USDA/CSREES	7,500
<b>Plant Pathology</b>	
Anne Vidaver — R.W. Goss Memorial Scholarship	2,800
Martin Dickman with Massachusetts Institute of Technology — NRI	850,000
Jennifer Chaky — Nebraska Department of Agriculture	4,460
Loren Giesler and Tom Hunt — Nebraska Soybean Board	18,858
Loren Giesler and George Graef — Nebraska Soybean Board	39,206
Tom Powers — NSF	69,448
Gary Yuen, Loren Giesler and Anne Vidaver — Nebraska Soybean Board	40,220
<b>Plant Science Initiative</b>	
Tom Clemente and George Graef — Nebraska Soybean Board	49,060
<b>School of Natural Resources</b>	
Sunil Narumalani — Nebraska Emergency Management Agency (NEMA)	31,900
Jim Merchant and Chad Boshart — Nebraska Emergency Management Agency	35,414
Craig Allen — U.S. Geological Survey/BRD	44,000
Xun-Hong Chen — Central Platte Natural Resources District	48,150
Geoffrey Henebry and Kirsten DeBeurs — NASA	24,000
Craig Allen — James S. McDonnell Foundation	83,810
Robert Kuzelka — EPA	31,562
Don Rundquist — NASA	132,638
Kenneth Hubbard — U.S. Department of Interior	30,000
Anatoly Gitelson — NASA	24,000
Donald Wilhite — USDA/CSREES	41,667
Ronald Rundquist — NASA	7,500
Sunil Narumalani — Nebraska Army National Guard	59,038
Scott Hygnstrom — USDA-APHIS	105,930
Kyle Hoagland — CESU/National Park Service	10,000
Don Wilhite — USDA/CSREES	217,593
Xun-Hong Chen — Upper Big Blue Natural Resources District	75,000
Shashi Verma — U.S. Department of Energy	300,000
<b>Statistics</b>	
Kent Eskridge — State of Nebraska, Department of Health and Human Services	16,785
<b>Veterinary and Biomedical Sciences</b>	
Raul Barletta — Subcontract from University of Minnesota — NRI	51,122
Clayton Kelling — Veterinary Science Virology	2,900
Fernando Osorio and Asit Pattnaik — National Pork Board	145,000
Fernando Osorio — National Pork Board	42,000
Asit Pattnaik and Fernando Osorio — NRI	320,000
<b>West Central Research and Extension Center</b>	
Jose Payero — Anna Elliott	3,000
Jose Payero — U.S. Department of Interior	10,000
Roger Wilson, Richard Clark and Doug Jose — Nebraska Soybean Board	10,572
<b>TOTAL</b>	<b>5,258,525</b>