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ARD News August 2004

Nebraska University of Lincoln

ARD

Agricultural Research Division News

IANR

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Comments from the Dean

Dear Colleagues:

During the past week, two groups of faculty have expressed concern that UNL is only interested in recognizing project leaders receiving grants that exceed $1 million. These faculty feel that scientists who do not receive large grants are not considered as "worthy" as those who are being recognized at special news conferences and celebrations. In addition, some IANR faculty feel that UNL is moving away from the Land-Grant philosophy of serving the people of Nebraska to a focus on acquisition of large grants from federal agencies.

In responding to these faculty concerns, I have attempted to reaffirm that the Agricultural Research Division and IANR value the research programs of all faculty members regardless of their level of federal agency support. In our view, the purpose of ARD research programs is to generate outcomes and impacts that improve the lives of Nebraskans. Of course, external grant funds are important to provide the resources necessary to carry out many of our research projects, but grants are not the object of the research effort. Furthermore, the source of the funds supporting a research project is not relevant to the project's success or the rewards accruing to the faculty member. As I have repeatedly stated, "All money is green," and a dollar from a commodity board or industry will buy exactly the same amount of supplies as a federal dollar.

We all should celebrate the success of our colleagues who obtain large federal grants. However, this recognition does not detract in any way from the success of others who support their research programs from smaller federal or state agency grants, industry grants or commodity board grants. ARD tries to recognize all grants larger than $10,000 by listing them in ARD News, and IANR administrators give appropriate "credit" for all grants, regardless of size, during the annual evaluation, promotion and tenure decision processes.

It is interesting to note that ARD faculty obtained 691 grants and contracts that totaled $33.96 million during CY 2003 . Thus, the average grant and contract was $49,146, although the actual size varied greatly. Federal grants obtained by faculty members totaled $23.77 million and the size of the average grant was $178,739. ARD faculty obtained 558 non-federal grants and contracts totaling $10.19 million with an average grant/contract being $18,257. Grants and contracts of over $1 million obtained by ARD faculty were rare and support only a very small number of our projects. Most of the ARD projects are supported by several modest grants that provide enough funding for one or more GRAs, operating and travel support, and some technician salaries.

I am delighted with the great increase in research grant funding obtained by UNL faculty over the past three years. ARD scientists have played a significant role in this increased grant income, and we need to continue seeking funds to support our research projects. However, our focus should be on obtaining funds that allow us to address the objectives present in our research projects, rather than merely seeking funds that may be available. Each of you are contributing to UNL's success in grant acquisition and enhanced national reputation in research. All ARD faculty should be proud of their accomplishments.

Darrell W. Nelson
Dean and Director

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 to 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's instructions, this program will support attendance to professional society meetings in the fields of animal science, agricultural education and leader-

ship, 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. Twelve students applied for the travel award. Eleven IANR students received the William G. Whitmore memorial grant for travel during the period July 1 - Dec. 31, 2004:

Name: Andrea J. Gage
Department: Agricultural Leadership, Education and Communication
Meeting: Association of Leadership Education
Place: Memphis, Tennessee

Name: Bobbie Geisert
Department: Animal Science
Meeting: Animal Science and Dairy Science Joint Meetings
Place: St. Louis, Missouri

Name: Ana Z. Ruiz
Department: Animal Science
Meeting: Annual Meeting of the Society of Study of Reproduction
Place: Vancouver, British Columbia, Canada

Name: Oscar Esquivel
Department: Animal Science
Meeting: Institute of Food Technologists Annual Meeting
Place: Las Vegas, Nevada

Name: Angel Rios Utrera
Department: Animal Science
Meeting: ADSA/ASA/Joint Annual Scientific Meeting
Place: St. Louis, Missouri

Name: Kristi Sayer
Department: Animal Science
Meeting: American Society of Animal Science Meeting
Place: St. Louis, Missouri

Name: Kimberly Hargrave
Department: Animal Science
Meeting: American Society of Animal Science Meeting
Place: St. Louis, Missouri

Name: Juliati Rahajeng
Department: Animal Science
Meeting: Cold Springs Harbor Lab — Mouse Molecular Genetics
Place: Cold Springs Harbor, New York

Name: David Monsalve
Department: Animal Science
Meeting: Animal Science Association/Poultry Science
Place: St. Louis, Missouri

Name: Sandra Sattler Weber
Department: Human Sciences, Leadership Studies
Meeting: Strengthening Partnerships: New Paths to Rural Prosperity
Place: Sacramento, California

Name: Rohana P. Dassanayake
Department: Veterinary and Biomedical Sciences
Meeting: Conference on Research Works in Animal Disease
Place: Chicago, Illinois

The next call for these travel funds will be sent to the unit administrators the **first week in October 2004 for travel from Jan. 1 to June 30, 2005.**

David H. and Annie E. Larrick Fund 2004

The David H. and Annie E. Larrick fund supports 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 for travel grants to present research findings at national or regional meetings.

Name: Hui Shen
Department: Agronomy and Horticulture
Meeting: ASA-CSSA-SSA Annual Meeting
Place: Seattle, Washington

Name: Anna Prudova
Department: Biochemistry Department
Meeting: Folic Acid, Vitamin B-12 and the Carbon Metabolism Meeting
Place: Snowmass Village, Colorado

Name: Mary Carla McCullough
Department Biological Systems Engineering
Meeting: Self-sustaining Solutions for Streams, Watersheds and Wetlands
Place: St. Paul, Minnesota

Name: Jennifer Melander
Department: Biological Systems Engineering
Meeting: Biomedical Engineers Society Annual Fall Meeting
Place: Philadelphia, Pennsylvania

Name: Jonathan Morse
Department: Biological Systems Engineering
Meeting: Biomedical Engineers Society Annual Fall Meeting
Place: Philadelphia, Pennsylvania

Name: Jason Byler
Department: Biological Systems Engineering
Meeting: American Society of Agricultural Engineers Meeting
Place: Ottawa, Ontario, Canada

Name: Philip Christenson
Department: Biological Systems Engineering
Meeting: American Society of Agricultural Engineers Meeting
Place: Ottawa, Ontario, Canada

Name: Junjie Guan
Department: Biological Systems Engineering
Meeting: American Society of Agricultural Engineers Meeting
Place: Ottawa, Ontario, Canada

Name: Ajay Kumar
Department: Biological Systems Engineering
Meeting: American Association of Cereal Chemists Meeting
Place: San Diego, California

Name: Alejandro Amezquita
Department: Biological Systems Engineering
Meeting: Institute of Food Technologists Annual Meeting
Place: Las Vegas, Nevada

Name: Thomas Eickhoff
Department: Entomology
Meeting: International Congress of Entomology
Place: Brisbane, Australia

Name: Shauna Hawkins
Department: Entomology
Meeting: Entomology Society of America Annual Meeting
Place: Salt Lake City, Utah

Name: R.M. Wajira S. Ratnayake
Department: Food Science and Technology
Meeting: American Association of Cereal Chemists Annual Meeting
Place: San Diego, California

Name: Marcos Sanchez
Department: Food Science and Technology
Meeting: International Association for Food Protection Meeting
Place: Phoenix, Arizona

Name: Yixiang Xu
Department: Food Science and Technology
Meeting: American Association of Cereal Chemists Annual Meeting
Place: San Diego, California

Name: Maritza B. Leon
Department: Nutritional and Health Sciences
Meeting: Institute of Food Technologists Annual Meeting
Place: Las Vegas, Nevada

Name: Patricia Lynch
Department Nutritional and Health Sciences
Meeting: Society for Nutrition Education
Place: Salt Lake City, Utah

Name: Shakhlo Yarbayeva
Department: Nutritional and Health Sciences
Meeting: Institute of Food Technologists Annual Meeting
Place: Las Vegas, Nevada

Name: Changbin Chen
Department Plant Pathology
Meeting: American Phytopathological Society Annual Meeting
Place: Anaheim, California

Name: Narendra Reddy
Department: Textiles, Clothing and Design
Meeting: American Chemical Society Annual Meeting
Place: Philadelphia, Pennsylvania

Name: David Karst
Department: Textiles, Clothing and Design
Meeting: American Chemical Society Annual Meeting
Place: Philadelphia, Pennsylvania

Name: Peter Skelton
Department: School of Natural Resources
Meeting: 1st World Congress of Agroforestry
Place: Orlando, Florida

Name: Giorgio Dall'Olmo
Department: School of Natural Resources
Meeting: Ocean Optics XVII Conference
Place: Fremantle, Australia

Name: Silka Finkbeiner
Department: School of Natural Resources
Meeting: Wildlife Society Annual Meeting
Place: Calgary, Alberta, Canada

Name: Will F. Meyers
Department: School of Natural Resources
Meeting: Geological Society of America Annual Meeting
Place: Denver, Colorado

Name: Naikoa Amuchastegui
Department: School of Natural Resources
Meeting: Catinuamerican Meeting of Scaralogeoidology
Place: Costa Rica, Central American

Name: Kathleen Eggemeyer
Department: School of Natural Resources
Meeting: Ecological Society of America Annual Meeting
Place: Portland, Oregon

Hardin Distinguished Graduate Fellowship 2004-2005

The recipient of the Hardin Distinguished Graduate Fellowship for 2004-2005 is **Zheng Qing Fu,** who is in the Plant Pathology Department. The 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. He will receive a $2,000 supplement to his graduate assistantship and the Agronomy and Horticulture Department will receive $1,000 of operational support for his research program.

Zheng Qing Fu is completing his Ph.D. in the Plant Pathology Department and his dissertation deals with "determining plant responses to biotic stresses at the molecular level." Zheng's work will provide important

information to improve germplasm resistance in plants, both in developed and developing countries' projects focusing on a protein from a bacterial plant pathogen called HopPtoS2. His hypothesis is that the plant proteins modified by HopPtoS2 are likely to be involved in plant defense, and they are inactivated when they are ADP-ribosylated by HopPtoS2. This could be an excellent example of a bacterial plant pathogen turning off a defense response that is normally triggered when the plant senses biotic stress. Jim Alfano is his advisor.

Widaman Trust Distinguished Graduate Assistant Award

The Widaman Trust was established in 1975 through a generous gift provided to the University of Nebraska Foundation by Ms. Blanche 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 for 2004-2005.

Name: Aaron L. Waltz
Thesis area: Agronomy
Department: Agronomy and Horticulture
Advisors: Alex Martin and Fred Roeth

Name: Maria Susan Grigera
Thesis area: Agronomy
Department: Agronomy and Horticulture
Advisors: Rhea Drijber and Brian Wienhold

Name: Jennie M. James
Thesis area: Animal Science
Department: Animal Science
Advisor: Chris Calkins

Name: Rebecca Bott
Thesis area: Reproductive Physiology
Department: Animal Science
Advisor: Andrea Cupp

Name: Razvan Dumitru
Thesis area: Biochemistry
Department: Biochemistry
Advisor: Steve Ragsdale

Name: Balajii Sethuramasamyraja
Thesis area: Agriculture and Biological Systems Engineering
Department: Biological Systems Engineering
Advisor: Viacheslav Adamchuk

Name: Jeffrey T. Krumm
Thesis area: Entomology
Department: Entomology
Advisors: John E. Foster and Thomas E. Hunt

Name: Kari Shoaf
Thesis area: Food Science and Technology
Department: Food Science and Technology
Advisor: Robert Hutkins

Name: R.M. Wajira Ratnayake
Thesis area: Food Science and Technology
Department: Food Science and Technology
Advisor: David S. Jackson

Name: Maricelis Acevedo
Thesis area: Biological Sciences
Department: Plant Pathology
Advisor: James Steadman

Al Moseman International Studies Fund 2004-2005

The Al Moseman International Studies Fund was established through a trust at 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: Arlene Adviento-Borbe
Thesis area: Crop Management Practices-Greenhouse Gas Emissions
Department: Agronomy and Horticulture
Advisor: Achim Dobermann

John and Louise Skala Fellowship 2004-2005

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 to full-time graduate students in the Institute of Agriculture and Natural Resources. The recipient of this fellowship must be engaged in research in areas relating to the new industrial uses of agricultural products.

Four students are the recipients of this $5,000 award through the Agricultural Research Division and the College of Agricultural Sciences and Natural Resources:

Name: Leslie A. Stalker
Thesis area: Animal Science
Department: Animal Science
Advisor: Don Adams

Name: Ajay Kumar
Thesis area: Agriculture/Biological Systems Engineering
Department: Biological Systems Engineering
Advisor: Milford Hanna

Name: Junjie Guan
Thesis area: Biological Systems Engineering
Department: Biological Systems Engineering
Advisor: Milford Hanna

Name: Yixiang Xu
Thesis area: Food Science and Technology
Department: Food Science and Technology
Advisor: Milford Hanna

Shear-Miles Fellowship 2004-2005

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.

Two students will be recipients of this $2,000 award given for the third time by ARD:

Name: Jennifer Moss
Thesis area: Leadership Studies
Department: Agricultural Leadership, Education and Communication
Advisor: John Barbuto

Name: Tanja Petnicki-Ocwieja
Thesis area: Molecular Biology
Program: Plant Science Initiative
Advisor: Jim Alfano

Grants and Contracts Received July and July 2004

Agricultural Economics
Miscellaneous Grants Under $10,000 each — $ 2,500

Agriculture Research and Development Center
Duncan, Dan — Barta Brothers via UNL Foundation — 10,000

Agronomy and Horticulture
Baenziger, Stephen, Thomas Clemente, Martin Dickman, John Watkins and **David Baltensperger** — USDA/ARS — 106,218
Spalding, Roy — Nebraska Department of Environmental Quality — 27,500
Wortmann, Charles — Charles and Katherine W. Baker via UNL Foundation — 12,000
Miscellaneous grants under $10,000 each — 80,410

Animal Science
Cupp, Andrea — NIH — 71,196
Keown, Jeffrey, Sarah Ivan and **Bill Chapman** — Nebraska Corn Development, Utilization and Marketing Board — 10,000
Klopfenstein, Terry, Rodney Moxley, David Smith, Galen Erickson and **Susan Hinkley** — Bioniche Life Sciences — 25,000
Miscellaneous grants under $10,000 each — 10,000

Biochemistry
Banerjee, Ruma — Jonty Foundation — 80,000
Banerjee, Ruma — American Heart Association — 25,000
Banerjee, Ruma — National Institute of Diabetes and Digestive and Kidney Diseases — 297,538
Ragsdale, Stephen — USDOE — 140,000
Ragsdale, Stephen — NSF — 70,000
Weeks, Donald — Consortium for Plant Biotechnology Research, Inc. — 40,000
Miscellaneous grants under $10,000 each — 11,250

Biological Systems Engineering
Franti, Thomas — Charles B. and Katherine W. Baker via UN Foundation — 12,000
Irmak, Suat — Burlington Northern Endowment via UN Foundation — 38,000
Miscellaneous grants under $10,000 each — 2,000

Director's Office
Nelson, Darrell — USDA/ARS — 1,415,900

Entomology
Kamble, Shripat and **Robert Wright** — USDA through Michigan State University — 25,000
Meinke, Lance — Monsanto Corporation — 22,000
Siegfried, Blair — Monsanto Corporation — 25,200
Miscellaneous grants under $10,000 each — 22,600

Food Science and Technology
Benson, Andrew — Biobalance Corporation — 24,820
Benson, Andrew — NIH-NIAID — 195,500
Ryu, Dojin — Layman Fund via UN Foundation — 10,000
Miscellaneous grants under $10,000 each — 1,700

Northeast Research and Extension Center
Hunt, Thomas and **Leon Higley** — Nebraska Soybean Board — 28,630
Miscellaneous grants under $10,000 — 79,700

Panhandle Research and Extension Center	
Hein, Gary — Monsanto Corporation	14,960
Hein, Gary — USDA/CSREES	96,467
Miscellaneous grants under $10,000	81,640
Plant Pathology	
Mitra, Amit — North Central Soybean Research Program	52,690
Van Etten, James — University of Massachusetts Lowell Research Foundation	63,489
Yuen, Gary -USDA/ARS	18,341
Miscellaneous grants under $10,000 each	8,600
School of Natural Resources	
Brandle, James — National Carbon Offset Coalition	19,000
Chalmers, Chris and **Jim Merchant** — Nebraska Department of Health and Human Services	143,218
Exner, Spalding Mary — Nebraska Department of Environmental Quality	27,500
Holz, John — Nebraska Department of Environmental Quality	45,000
Kuzila, Mark — Nebraska Department of Health and Human Services	43,822
Powell, Larkin — Nebraska Game and Parks Commission	24,053
Summerside, Scott — Little Blue NRD	46,643
Verma, Shashi, Timothy Arkebauer, Kenneth Hubbard, Johnnes Knops, Gary Lynne, Daniel Walters, Achim Dobermann and **Yiqi Yang** — Kansas State University	517,700
Wilhite, Donald — USDA/CSREES	187,584
Miscellaneous grants under $10,000 each	8,770
Veterinary and Biomedical Sciences	
Lou, Marjorie — National Eye Institute	422,174
Smith, David — Nebraska Department of Agriculture	30,000
Miscellaneous grants under $10,000 each	6,530
West Central Research and Extension Center	
Miscellaneous grants under $10,000 each	21,800
Grand Total	**4,801,643**

New or Revised Projects

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

NEB-12-274 (Agronomy and Horticulture) Physiological Bases of Environmental Constraints on Plant Growth and Productivity
Investigator: Timothy Arkebauer
Status: Revised Hatch project effective July 1, 2004

NEB-12-306 (Agronomy and Horticulture) A Phenological Network for Ecological Viticulture
Investigator: Paul Read
Status: State Interdisciplinary project effective July 1, 2004

NEB-12-307 (Agronomy and Horticulture) Seasonal Dynamics of Annual Forage Crops to Enhance Grazing Livestock Systems
Investigator: Bruce Anderson
Status: New Hatch project effective June 1, 2004

NEB-13-169 (Animal Science) Evaluating Heat Stress Effects on Reproduction in Laying Hens
Investigator: Mary Beck
Status: Special Hatch project effective March 1, 2004

NEB-14-132 (Veterinary and Biomedical Sciences) Examination of Attenuation and Virulence Determinants of Porcine Reproductive and Respiratory Syndrome Virus
Investigator(s): Asit Pattnaik, Fernando Osorio
Status: New Hatch project effective July 1, 2004

NEB-15-107 (Biochemistry) Evolution of Animal Lentiviruses/HIV
Investigator: Charles Wood
Status: New Hatch project effective May 1, 2004

NEB-16-082 (Food Science and Technology) Marketing and Delivery of Quality Cereals and Oilseeds
Investigator: David S. Jackson
Status: Hatch project contributing to NC-213 effective October 1, 2003

NEB-16-103 (Food Science and Technology) Development of Metabolic Profiling and Metabolic Fingerprinting as Analytical Tool for Educating Food Safety and Quality
Investigator: Vicki Schlegel
Status: New Hatch project effective May 1, 2004

NEB-17-086 (Entomology) Development and Delivery of User Friendly IPM Tools for Use with PC and POA
Investigator(s): Leon Higley, Thomas Hunt, Wyatt Hoback, Douglas Golack
Status: CSREES Grant effective May 15, 2004

NEB-21-100 (Plant Pathology) Evaluation of Airborne Remote Sensing and the Advanced Vegetation Index Suite for Crop Disease Detection: The Case of Dry Bean Rust
Investigator(s): James Steadman
Status: State Interdisciplinary project effective July 1, 2004

NEB-40-029 (School of Natural Resources) Drought Effects on Bird Dispersal Transmission in Nebraska Wetlands
Investigator: Larkin Powell
Status: Hatch Special project effective March 1, 2004

NEB-43-065 (West Central Research and Extension Center) Integrated Weed Management in Reduced Tillage Systems in Low Rainfall Environments
Investigator: Gail A. Wicks
Status: New Hatch project effective January 1, 2004

NEB-44-058 (Panhandle Research and Extension Center) Integrated Management Systems for Arthropod Pests of Wheat and Other Crops in Western Nebraska
Investigator: Gary Hein
Status: Revised Hatch project effective May 1, 2004

NEB-91-061 (Nutritional and Health Sciences) The Use of Inulin as a Functional Food Ingredient
Investigator: Marilynn Schnepf
Status: New Hatch project effective June 1, 2004

NEB-92-043 (Family and Consumer Sciences) Parent Engagement and Child Learning Birth to Five
Investigator: Carolyn Pope Edwards
Status: New Hatch project effective June 1, 2004

Proposals Submitted for Federal Grants June and July, 2004

The following is a listing of proposals that were submitted the past two months 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.

Steve Hu — NOAA — Sources of Multidecadal Variation in the Interrelationship of ENSO and Summer Rainfall in the Central United States — $215,253

Milford Hanna and **John Belot** — NSF — New Rare Earth Catalysts for the Fabrication of Biodegradable Polyester Monoliths Using Renewable Molecular Feedstocks — $525,379

F. Edwin Harvey — NSF — Collaborative Research: Multiscale Hydrogeologic Assessment of a Floodplain — $85,747

Galen Erickson, Dennis Schulte and **Rick Stowell** — USDA/NRI — Nutritional and Management Methods to Reduce Ammonia and Greenhouse Gas Emission from Confined, Open-Cattle Systems — $499,672

Ayse Irmak, Loren Giesler, Anatoly Gitelson, Donald Rundquist and **George Meyer** — USDA/NRI — Tools for Early Detection and Monitoring of Soybean Rust in the Continental United States — $924,107

Anne Vidaver — USDA/NRI — Detection, Molecular Analysis and Plant/Microbe Interactions of the Emerging Toxigenic Bacterium *Rathayibacter toxicus* and *R. rathayi* in grasses — $999,401.

Marjorie Lou — NIH — Protein-thiol Mixed Disulfides in Cataractogenesis — $1,709,454

Kenneth G. Hubbard — NOAA — Quality Control and Trends in 20th Century U.S. Snowfall Using a Newly Digitized Data Set — $36,000

Donald A. Wilhite — USDA/CSREES — Developing Drought Mitigation and Preparedness Technologies for the U.S. — $187,584

Thomas O. Powers — NSF — Species Inventory of Nematodes in Tropical Rain Forests of Costa Rica — $153,122

David D. Baltensperger, Charles A. Francis, Charles A. Shapiro, James R. Brandle, Stevan Z. Knezevic and **Robert J. Wright** — USDA/CSREES — Improving Organic Crop Production Across Ecoregions: an Agroecosystem Approach — $798,900

James L. VanEtten — NIH — DNA Replication and Gene Expression of Chlorella Viruses — $1,120,000

Loren Giesler and **Thomas Hunt** — USDA/NRI — Survey and Rapid Delineation of Exotic Crop Disease and Arthropod Pests Populations in the Great Plains Region — $963,040

Milford A. Hanna and **Loren Isom** — USDA/CSREES — Post Award Management of Biomass R&D Initiative Projects — $25,000

Raul Barletta — USDA/NRI — Functional Genomics of *Mycobacterium paratuberculosis* — $1,000,000

Stephen Ragsdale — USDOE — Enzymology of Methanogenesis: Mechanism of Methyl-Coenzyme M Reductase — $535,398

Yiqi Yang, Wenlong Zhou and **Narendra Reddy** — The Consortium for Plant Biotechnology Research, Inc. — Textile Applications of Corn Stover: Fiber Extraction and Product Development — $144,304

Jeffrey D. Cirillo and **Andrew K. Benson** — NIH/NIAID — Evolutionary Mechanisms for Emergence of Legionella — $1,733,000

Kenneth G. Hubbard and **Stephen M. Goddard** — NSF — ITR Collaborative Research: A Distributed Database of *in situ*, Remotely Sensed and Modeled Climate Data for Decision Makers — $668,405

David Wedin and **Tim Arkebauer** — NSF through University of Minnesota — Duluth — Acclimation of Soil Respiration to Experimental Warming in Grasslands — $254,284

Jeffrey D. Cirillo — NIH-NIAID — Evolutionary Mechanisms in Infectious Diseases — $1,460,000

John Osterman, Patricia Herman and **John Markwell** — USDOE — Formate Metabolism in Plants — $501,251

Mark Hutchison and **Marilyn Schlake** — USDA/FSMIP — Implementation of a Producer/Buyer Distribution System — $75,112

Donald A. Wilhite — USDA/CSREES — Drought Monitoring, Planning, and Mitigation — $41,667

Blair D. Siegfried and **Thomas E. Hunt** — USEPA — Biochemical and Genetic Mechanisms of Bt Resistance in Field Populations of the European Corn Borer — $179,456

James Specht — USDA/ARS — Drought Stress Tolerance in Nebraska — $68,185

Darrell W. Nelson — USDA/ARS — Research to Improve Production Efficiency/Meat Quality, Reduce Food Safety Pathogens, and Minimize Impact of Animal Agriculture on Environment — $1,415,900

Alexander R. Martin — USDA/ARS — Effect of Transgenes from Sorghum on the Fitness of Shattercane X Sorghum Hybrids — $75,000

Curt Weller — USDA/ARS — Development of Sorghum Lipids as Nutraceuticals — $40,000

James Specht — USDA/ARS — Genetic Mapping and Applications of SNP DNA Markers in Soybean — $38,199

Gary Hein — USDA/ARS — Biologically Intensive Areawide IPM of the Russian Wheat Aphid and Greenbug — $85,436

James R. Steadman — USDA/ARS — Resistance Improvement of Bean Through Multi-site Screening and Pathogen Characterization — $41,800

David Stanley — NSF — Temporal Organization of Prostaglandin Action in Insect Cell Immunity — $262,334

Craig R. Allen — USGS — Evaluation of the Nebraska Landowner Incentives Program Practices for Species at Risk — $44,000

Donald F. Becker — NIH — Mechanistic Studies of PRODH and Redox Homeostatis — $1,533,840

Greg Bashford — NSF — CAREER: Three-Dimensional Volume Blood Flow Measurement by Ultrasonic Feature Tracking — $692,671

Nebraska Crops — 2004

Crop	*Acres planted*	*2004 acres as % of 2003 acres*	*Nebraska acres as % of U.S. acres*
	1,000 acres		
Corn	8,300	102	10.3
Soybeans	4,750	104	6.3
Winter Wheat	1,950	103	4.5
Grain Sorghum	550	83	6.8
Oats	140	64	3.3
Proso Millet	180	90	25.0
Dry Beans	130	84	9.1
Sugar Beets	50	110	3.7
Sunflowers	41	62	2.2

Leading States for Cash Receipts, 2002

Top 10 States by their Value of Cash Receipts (Million Dollars)

Item	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
All Commodities	Calif. 26,107	Texas 12,665	Iowa 10,834	Nebr. 9,589	Kans. 7,862	Ill. 7,486	Minn. 7,478	Fla. 6,848	N.Car. 6,603	Wisc. 5,319
Livestock & products	Texas 8,088	Calif. 6,242	Nebr. 5,824	Kans. 5,325	Iowa 5,075	N.Car. 3,944	Wisc. 3,768	Minn. 3,645	Colo. 3,502	Ark. 2,952
Crops	Calif. 19,865	Ill. 5,924	Iowa 5,759	Fla. 5,609	Texas 4,577	Minn. 3,833	Nebr. 3,764	Wash. 3,714	Ind. 3,249	N.Car. 2,659
Cattle & Calves	Texas 5,863	Nebr. 4,969	Kans. 4,810	Colo. 2,805	Okla. 1,872	Iowa 1,765	S.Dak. 1,494	Calif. 1,229	Idaho 976	Minn. 866
Corn	Iowa 3,259	Ill. 3,106	Nebr. 2,252	Ind. 1,506	Minn. 1,349	Ohio 703	Kans. 677	S.Dak. 662	Mo. 615	Wisc. 565
Soybeans	Iowa 2,260	Ill. 2,256	Minn. 1,328	Ind. 1,262	Nebr. 944	Mo. 866	Ohio 816	S.Dak. 625	Ark. 493	Mich. 365
Hogs	Iowa 2,425	N.Car. 1,407	Minn. 1,068	Ill. 722	Nebr. 584	Ind. 520	Mo. 427	Okla. 378	Ohio 263	S.Dak. 246
Wheat	Kans. 902	N.Dak. 820	Wash. 476	Mont. 366	Okla. 314	Idaho 294	Minn. 243	Texas 217	S.Dak. 179	Nebr. 171
Hay	Calif. 575	Texas 405	Wash. 271	Idaho 268	Oreg. 258	Colo. 210	N.Mex. 186	Kans. 174	Okla. 159	Mo. 141
Sorghum Grain	Kans. 335	Texas 299	Nebr. 46	Ark. 41	Mo. 37	La. 33	Okla. 32	Ill. 16	Miss. 15	S.Dak. 11
Sugarbeets	Minn. 357	N.Dak. 221	Idaho 204	Mich. 111	Calif. 62	Mont. 43	Nebr. 28	Colo. 27	Wyo. 26	Oreg. 12

Source: Economic Research Service, USDA, August 2003.