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## ARD News February 1998

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# ARD

## 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

February 1998

Volume 32, Number 4

### Comments from the Dean

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Dear Colleagues:

Thanks for your active participation in the discussion regarding "Budgeting by Program Thrusts." I appreciate your attendance at the IANR "Brown Bag" session, dialogue at unit faculty meetings and your direct contacts with me. The draft document represents a "thought piece" to stimulate discussion rather than a proposal for implementation.

The Administrative Council decided to initiate a dialogue with the faculty on this topic because of strong signals that we are receiving from clientele and federal and state decision makers. National level activities (NRC study and other recent studies of Land-Grant Universities; Research, Extension and Education Title of the Farm Bill; Kellogg Commission on the "Status of Land-Grant Universities"; and the NASULGC "Issues to Answers" planning process) have identified the following changes that must be made if Land-Grant Universities are to prosper in the 21st Century:

- Much more stakeholder input on programs;
- Programs focused on the public good; more accountability;
- Increased amount of interdisciplinary programs;
- More multi-state programs;
- More effective integration of extension and research;
- Involvement of the broader university in programs.

Likewise, Nebraska clientele have expressed that IANR should change in the following ways:

- Increased interdisciplinary, systems work in research and extension;
- More stakeholder input on programs;
- More focus on the real problems of Nebraskans;
- More flexibility to address emerging issues;
- More accountability for resources provided by the Legislature.

There are a number of approaches that could be used to address these suggestions. Our challenge is to develop processes/procedures that will lead to change while maintaining the essential role and mission of IANR. Your ideas and suggestions are welcome as we strive to develop workable approaches to meeting Nebraskans' needs while maintaining a strong, nationally respected research program.

*Darrell W. Nelson  
Dean and Director*

### ARD "Service Objectives"

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In the February 1992 issue of *ARD News*, we first published the ARD "Service Objectives." The ARD staff have attempted to adhere to the objectives since that time. We have recently revised the "Service Objectives" and are providing them to ARD-affiliated faculty and staff to reaffirm our intent to provide the best possible service to individual faculty and IANR units.

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All Agricultural Research Division (ARD) administrators and office personnel believe that their role is to provide support and service to the research programs of units and faculty members. We will continually strive to enhance the effectiveness of all research projects to the greatest extent possible. One means of assisting the research efforts of faculty members, graduate students and support staff is to provide the highest level of administrative services possible. We are committed to excellence in administration and, hereby, establish the following "Service Objectives."

#### Office Personnel Commitments

- ◆ The following forms will be processed, signed and forwarded to the appropriate office/unit either the same day or the morning of the following day (in



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.



some cases additional processing may occur in Agriculture Hall before forms are returned to the unit or sent to City Campus):

- Position descriptions;
  - Personnel requisitions and related documents;
  - Proposals to interview;
  - Personnel Actions Forms (PAFs);
  - Reimbursement vouchers;
  - Research Council proposals/requests;
  - IANR Professional Development requests;
  - Permission to engage in outside professional activity;
  - Requisitions and purchase orders;
  - Tuition remission forms;
  - Travel authorizations;
  - Manuscript record forms;
  - Graduate faculty nominations;
  - Other routine documents.
- ◆ Telephone calls will be handled in a courteous and helpful manner. Telephone messages will be relayed as soon as the person returns or can be contacted.
  - ◆ E-mail correspondence will be answered in a timely manner, normally the day of receipt.
  - ◆ Efforts will be made to initiate scheduling project reviews within three working days after the research project outline arrives in ARD. The time that the review is conducted depends upon the availability of review committee members and department heads.
  - ◆ All grant proposals, whether federal or private, will be processed and forwarded to either Research Grants and Contracts Office or USDA agencies as appropriate within eight working hours after receipt in ARD.
  - ◆ Processing of revised project outlines and AD 416/417 Worksheets will be initiated within three working days after arrival in ARD. The project materials will be sent to the CRIS system and CSREES as soon as possible after this date.
  - ◆ Processing of cooperative agreements and contracts will be initiated within three working days after arrival in ARD. Processing will be completed and the documents forwarded to the agency/company as soon as possible thereafter.

#### Administrator Commitments

- ◆ Except in the most extreme circumstances, someone with ARD signature authority will be available every working day. Under no circumstance will there be more than one consecutive working day without this capability.
- ◆ RFPs will be sent to units within two working days after ARD receipt.
- ◆ Recurring RFPs will be anticipated and preliminary notice sent to units at least thirty days prior to the proposal deadline.
- ◆ Rationale for funding decisions will be communicated to unit administrators.

- ◆ All priority incoming mail will be processed as soon as possible and acknowledgments/ responses will be sent within five working days.
- ◆ All telephone calls to a specific individual will be returned within twenty-four hours after the person returns to the ARD office. Callers will be notified of the time the individual will return and an offer will be made to redirect the call.
- ◆ Decisions or priority rankings on proposals for "local" grant programs (i.e., Layman Fund, UN Foundation, ARD Interdisciplinary Research, Elliott Fund, Sampson Fund, etc.) will be made within two weeks after deadline for receipt of proposals. Feedback will be provided to all funded and non-funded authors.
- ◆ Decisions on recipients for ARD awards will be made within two weeks after deadline for nominations.
- ◆ Decisions regarding allocation of "new" resources (i.e., equipment funds, operating, hourly, and GRA stipends) will be made within two weeks after deadline for receipt of proposals from units. Decisions requiring joint decisions by divisions/college may require a longer period of time.
- ◆ Administrators will maintain an "open door" policy. We will be pleased to meet with any faculty or staff member or unit administrator at any time our schedule permits.
- ◆ Administrators will provide appropriate accountability on all funds.
- ◆ The ARD will strive to provide high-quality outreach materials suitable for a variety of audiences and clientele. Materials will emphasize impact and outcomes.
- ◆ Administrators will develop and communicate reasonable, attainable research productivity goals for units and faculty.
- ◆ Administrators will value, promote and support interdisciplinary research teams.
- ◆ Administrators will support faculty participation in regional research projects.
- ◆ Administrators will provide appropriate programs to support the graduate and undergraduate education of students interested in research careers.

Revised: January 1998

## Definition of Scientist Year (SY), Professional Year (PY), and Technical Year (TY)

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When preparing documentation for USDA related to research projects, particularly regional research projects, faculty and unit administrators are often asked to identify the human resource commitment to

the project in terms of SYs, PYs, and TYs. The question commonly arises as to just what these are and what personnel should be included in the FTE assigned to each category. The following definitions are from the USDA-CSREES Manual for Cooperative Research:

**Scientist Year (SY)**

A "Scientist" (Assistant Professor and above) is a research worker responsible for creative scientific study, thought originality, judgments, and accomplishments directly assignable to the project reported. This should include the efforts of leaders of investigation, project leaders, and portions of time of supervisory working scientists or staff assistants whose work meets the preceding definition. **Administrative staff are excluded**, unless they are active participants in the research actions of a project and meet the above requirements. Centralized statistical or other analytical staff should not be included.

**Professional Year (PY)**

These are persons who hold positions in professional categories and who are assigned to research activities of the project, but who are not held responsible for scientific originality of the research nor for planning and conducting the more difficult aspects of the work. Include professional research service staffs. A few may hold the Ph.D. or equivalent degree, and may be in a higher level academic position because of special abilities, but still may be categorized as research assistant or as research support rather than as research scientist. Such professionals usually hold one or more college degrees and have otherwise qualified for employment in a professional category.

Graduate students, by virtue of their degree and acceptance in graduate school, may be categorized as "professionals." To be so categorized, they must be discharging intellectual responsibilities at a professional level. Outstanding graduate students with sound backgrounds of professional accomplishments may thoroughly merit the responsibilities of a scientist. Do not under rate the competence and value of such a worker because of a temporary status as a graduate student. Most of them will be rated as "professional support."

**Technical Year (TY)**

These are research technicians, aides, and laboratory assistants assigned to the project.

**Layman Awards**

IANR faculty submitted nine proposals for funding by the Layman Trust. A subcommittee of the ARD Advisory Council carefully evaluated each proposal and ranked the submissions in relation to quality of science and the potential impact of the proposed research. All proposals were forwarded to the Vice Chancellor for Research.

The primary aim of the Layman Awards is to provide seed money to enhance the possibility of obtaining external support for the research project. Only untenured faculty or tenured faculty who have not yet received an external grant are eligible for the program.

Six of the nine proposals submitted by ARD faculty were funded:

<b>Mindy Brashears</b>	\$7,200
Food Science and Technology "Competitive Inhibition of Food-borne Pathogens in Meat"	
<b>Robert Caldwell</b>	\$7,500
Agronomy Department "Evaluation of Corn Simulation Models for their Potential Role in UN-L Research"	
<b>Rhae A. Drijber</b>	\$5,995
Agronomy Department "Microbiological Signatures of High-Yield Irrigated Maize in Nebraska"	
<b>Lois Hamilton</b>	\$7,500
Textiles, Clothing and Design "Development of Textile Print Paste Binders by Chemically Modifying Wheat Gluten"	
<b>John Lindquist</b>	\$7,000
Agronomy Department "Biological Limits to Corn Yield in Nebraska"	
<b>Thomas E. Long</b>	\$7,379
WCREC / Animal Science "Relationships Between Plasma Very Low Density Lipoproteins and Maternal Traits in Distinct Dam Lines in Swine"	

**ARD Undergraduate Honors Student Research Program**

Applications for the FY 1999 ARD Undergraduate Honors Student Research Program are due in the ARD Office by close of business on April 1, 1998. This program will provide \$53,000 in funding as of July 1, 1998, to allow outstanding University Honors Program students to conduct research under the direction of a faculty mentor. The Undergraduate Honors Student Research Program is open to junior and senior University Honors Program students proposing to work with a faculty research project mentor who has an ARD appointment. ARD will provide up to \$2,500 per student for a maximum of 12 months to successful applicants. Students will be selected on the basis of their project proposal. The proposal shall be authored by the student with guidance from the proposed project mentor.

Guidelines for the program may be obtained from unit administrators or the ARD Office. It is important that all elements listed in the guidelines be included in the project proposal including the amount of match being provided by the mentor or the mentor's unit and the independent study contract completed by the student and the mentor.

## Undergraduate Honors Research Program

Funds for the FY 1998 Undergraduate Honors Student Research Program have been allocated to units for support of 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. Nine proposals were received for the first round and eight of the nine were awarded to the following students:

- Amy Lawson** — Biochemistry Department \$2,500  
 Researcher: Dr. Mark Morrison  
 "A Molecular-Based Examination of Some of the Factors Affecting Cellulose Degradation by *Ruminococcus albus*"
- Mary Nabity** — Veterinary and Biomedical Sciences \$2,500  
 Researcher: Dr. Clayton Kelling  
 "Determination of the Relationship Between Virulence & cDNA Sequence of the Fusion Protein of Bovine Respiratory Syncytial Virus"
- Colleen Marion** — Biochemistry Department \$2,500  
 Researcher: Dr. Gautam Sarath  
 "Investigating the Signal Transduction Properties of a Novel Maize Gene Using Plant Transformation and Recombination Technology"
- Edward Cargill** — Animal Science Department \$2,500  
 Researchers: Drs. Merlyn Nielsen and Daniel Pomp  
 "Chromosome Location of a Recessive Cataract Mutation in Mice"
- April Elizabeth Kester** — Food Science and Technology \$2,500  
 Researcher: Michael Zeece  
 "Application of Capillary Electrophoresis to the Analysis of Antioxidants in Foods"
- Carolyn M. O'Brien** — Biochemistry Department \$2,500  
 Researcher: Dr. Robert Spreitzer  
 "Interactions Between Rubisco and Rubisco Activase"
- David Drozd** — Agricultural Economics Department \$2,000  
 Researcher: John Allen  
 "The Impacts of Large Hog Confinement Use"
- Jennifer L. Strickland** — Animal Science Department \$2,500  
 Researcher: Jess Minor  
 "Effect of Selection for Energy Expenditure on Brown Adipose Tissue Function in Mice"

### Diane says

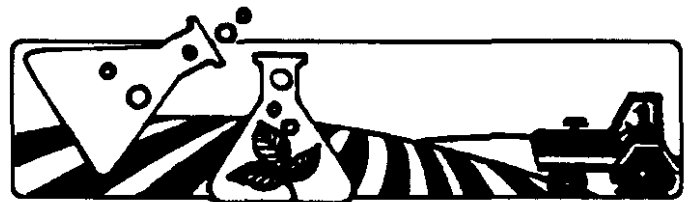
If you have plenty of push you will not be bothered by a pull.

## Potential New USDA Competitive Grants Program

The Senate version of the Research, Extension and Education Title (VIII) of the Farm Bill provides \$780 million for a new USDA competitive grants program to address some specific issues such as food safety, human nutrition, agricultural biotechnology, natural resources management, and the National Food Genome Strategy. Title VIII in the Senate version provides \$100 million for 1998, followed by \$170 million per year from 1999 to 2002. The funding would exist separately from the National Research Initiative (NRI) because the projects would be more multi-disciplinary and more applied in nature than those funded by the NRI.

Funding for this new program would be provided by savings in administrative costs from the food stamp program. Because the food stamp program is in a mandatory spending part of the USDA budget, Congress would not need to appropriate funding for this new competitive program each year. If the Senate version of Title VIII is passed by the Congress and signed by the President, the funding would automatically be provided for five years. The House of Representatives Agriculture Committee did not include this new program in their version of Title VIII. Some House members would like to see the administrative savings from the food stamp program used for reinstatement of food stamp benefits for legal immigrants, whereas other members of the House would like to see the money used for increased funding of crop insurance.

In early February, the two versions of Title VIII will be sent to a Conference Committee to work out the differences. We hope that a compromise can be found that would include the new competitive grants program. Also included in the Senate version was a provision to extend the Fund for Rural America for two additional years. We hope that the final version of the Title VIII includes this provision.



## Grants and Contracts Received December and January, 1998

<b>Agricultural Economics</b>	
Cordes, Sam — University of Missouri	\$ 15,030
Miscellaneous grants under \$10,000 each	2,000
<b>Agromony</b>	
Specht, James and Graef, George — United Soybean Board	92,844
Miscellaneous grants under \$10,000 each	7,000

<b>Animal Science</b>	
Klopfenstein, Terry — Biotal, Inc.	18,590
Mandigo, Roger — National Pork Producers	283,443
Miscellaneous grants under \$10,000 each	31,026
<b>Entomology</b>	
Siegfried, Blair — Rhone Poulenc	56,409
Miscellaneous grants under \$10,000 each	17,750
<b>Food Science and Technology</b>	
Meagher, Michael — US Army	99,994
Miscellaneous grants under \$10,000 each	29,000
<b>Horticulture</b>	
Shearman, Robert — Nat'l Turfgrass Eval. Program	61,386
Miscellaneous grants under \$10,000 each	28,130
<b>Northeast Research and Extension Center</b>	
Mader, Terry — Fort Dodge Animal Health	98,496
Miscellaneous grants under \$10,000 each	29,556
<b>Panhandle Research and Extension Center</b>	
Miscellaneous grants under \$10,000 each	97,900
<b>Plant Pathology</b>	
Miscellaneous grants under \$10,000 each	2,913
<b>School of Natural Resource Sciences</b>	
Wilhite, Donald — USDA/CSREES	46,296
Miscellaneous grants under \$10,000 each	18,100
<b>South Central Research and Extension Center</b>	
Miscellaneous grants under \$10,000 each	21,483
<b>Veterinary and Biomedical Sciences</b>	
Miscellaneous Grants \$10,000 each	10,890
<b>West Central Research and Extension Center</b>	
Hergert, Gary — USGS	60,000
Miscellaneous grants under \$10,000 each	12,997
<b>Grand Total</b>	<b>\$1,141,233</b>

## New or Revised Projects

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

### NEB-10-136 (Agricultural Economics) Impact Analysis and Decision Strategies for Agricultural Research

*Investigator:* Richard K. Perrin

*Status:* New Hatch project that contributes to regional project NC-208 effective Oct. 1, 1996

### NEB-12-225 (Agronomy) Studies on the Physiological Mechanisms which Improve N Uptake & Use Efficiency In Corn, Sorghum & Wheat

*Investigator:* Jerry W. Maranville

*Status:* Revised Hatch project effective Oct. 1, 1997

### NEB-13-036 (Animal Science) Management Systems for Improved Decision Making and Profitability of Dairy Herds

*Investigator(s):* Richard J. Grant and H. Douglas Jose

*Status:* Revised Hatch project that contributes to regional project NC-119 effective Oct. 1, 1997

### NEB-13-135 (Animal Science) Recombinant Bovine and Equine Gonadotropins

*Investigator:* H. Edward Grotjan

*Status:* New Hatch project effective May 1, 1997

### NEB-13-139 (Animal Science) Regulation of Gonadotropin Synthesis & Secretion, Ovarian Follicular Development & Testicular Function

*Investigator:* James E. Kinder

*Status:* New Hatch project effective Nov. 6, 1997

### NEB-15-085 (Biochemistry) Regulation of Transcription in Plastids of Higher Plants

*Investigator:* Lori A. Allison

*Status:* New Hatch project effective Nov. 5, 1997

### NEB-21-070 (Plant Pathology) Mitigation of Diseases of Dry Edible Bean and Stem Rot of Soybean by Managed Plant Resistance

*Investigator:* James R. Steadman

*Status:* New Hatch project effective Nov. 6, 1997

### NEB-27-012 (School of Natural Resource Sciences) The National Atmospheric Deposition Program (NADP)

*Investigator:* Shashi B. Verma

*Status:* Revised Hatch project that contributes to regional project NRSP-3 effective Oct. 1, 1997

### NEB-43-059 (West Central Research and Extension Center) Production Systems and Nutrition for Sandhills and Northern Great Plains Range

*Investigator:* Donald C. Adams

*Status:* New Hatch project effective June 1, 1997

### NEB-43-061 (West Central Research and Extension Center) Management Practices to Improve Reproduction of Beef Heifers

*Investigator:* Gene H. Deutscher

*Status:* New Hatch project effective Nov. 1, 1997

### NEB-43-062 (West Central Research and Extension Center) Genotype by Environment Interactions for Sow Productivity and Early Piglet Growth

*Investigator:* Thomas E. Long

*Status:* New Hatch project effective Nov. 6, 1997

## Proposals Submitted for Federal Grants

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The following is a listing of proposals that were submitted after November 1997 by faculty for federal grant programs. While not all grants will be funded, we are appreciative of the faculty member's effort in submitting proposals to the various agencies.

**Marjorie F. Lou** — National Institutes of Health — Protein-thiol Mixed Disulfides in Cataractogenesis — \$303,127

**Sharron Quisenberry, John Foster, Leon Higley and Xinzhi Ni** — National Agricultural Pesticide Impact Assessment Program (NAPIAP) — Benefits of Transgenic Maize Insect Resistance — \$51,765

**Lois Hamilton** — National Science Foundation — Development of Wheat Gluten Binders for Textile Print Pastes — \$71,475

**David S. Jackson and John-Paul Mua** — USDA/NRICGP — Adaptation of Corn Wet Milling-Type Process for Wheat Gluten and Wheat Starch Production — \$162,466

**Richard K. Perrin** — USDA/NRICGP — Evaluation of the Productivity-Environment Tradeoff: A Great Plains Case Study — \$108,256

**Lilyan E. Fulginiti** — USDA/NRICGP — The Market Effects of Commodity Progress: Wheat, Corn and Soybeans in the U.S. — \$114,094

**Rochelle L. Dalla and Shirley L. Baugher** — USDA NRICGP — Migration to Rural Meat Packing Communities: A Social, Economic and Policy Study — \$284,054

**Curtis L. Weller and Susan Cuppett** — USDA/NRICGP — Sorghum Wax Quantity and Quality as Influenced by Hybrid and Solvent — \$126,734

**David S. Jackson and Deepak Sahai** — USDA/NRICGP — Optimization of Corn Nixtamalization for Waste Minimization by Response Surface Methodology and Strategic In-Process Modifications — \$161,326

**Paul Blum, Paul Staswick and Thomas E. Elthon** — USDA/NRICGP — Enzymatic Production of Ethanol From Biomass Using Hyperthermophilic Plant Transgenes — \$332,801

**Lois E. Hamilton and Viswasrao Ghorpade** — USDA/NRICGP — Development of Wheat Gluten Binders for Textile Print Pastes — \$133,371

**K. Arumuganathan and Kulvinder S. Gill** — USDA/NRICGP — Sorting and Micro-Cloning of Individual Chromosomes of Maize — \$272,810

**Kulvinder S. Gill** — USDA/NRICGP — Molecular Characterization of a Major Gene Cluster of Wheat — \$301,281

**Thomas O. Powers and Allen L. Szalanski** — NSF — Nematode Biodiversity at ITEX Tundra Sites — \$109,281

**Kulvinder S. Gill** — USDA/NRICGP — Chromosome Arm-Specific Probes and Libraries of Wheat Generated Using Flow Sorting — \$304,363

**Stephen Taylor** — USDA/CSREES — Development and Quality/Safety Enhancement of Specialty Food Products — \$39,260

**Stephen Taylor** — USDA/CSREES — Midwest Advanced Food Manufacturing Alliance — \$395,409

**John Markwell and John Osterman** — NSF — Methanol Stimulation of Plant Growth — \$332,419

**S. Stephen Baenziger, Y. Yen and Kulvinder Gill** — USDA/NRICGP — The Genetic Basis of Agronomic Traits in Cultivated Wheat — \$399,152

**Thomas Powers** — NSF — Collaborative Research: Identifying Ecosystem Controls on Soil Biodiversity: A US/UK Project — \$215,907

**Susan Hefle** — USDA/CSREES — Alliance for Food Protection — \$140,216

**Donald A. Wilhite** — USDA/CSREES — Developing Drought Mitigation and Preparedness Technologies for the U.S. — \$186,955

**Martin B. Dickman** — USDA/NRICGP — Use of In Vivo Expression Technology to Select *Colletotrichum graminicola* Genes Solely Induced During Pathogenesis — \$64,553

**Martin B. Dickman** — USDA/NRICGP — Signaling in *Colletotrichum trifolii*: Functional Evaluation of RAS and a Cutin Induced Protein Kinase — \$236,894

**Jeffrey, Cilliro** — NIH — Role of Invasion Genes in Virulence of *Legionella* — \$497,759

**David Stanley** — NSF — Eicosanoids Mediate Insect Cellular Immunity — \$123,035

**Xinzhi Ni, Sharron Quisenberry, Leon Higley, and Fikru Haile** — USDA/NRICGP — Circadian Rhythms in Herbivore-Plant Interactions — \$155,731

**Rodney Moxley and Raul Barletta** — USDA/NRICGP — Role of *E. coli* Heat-labile Enterotoxin-I in Diarrhea and Septicemia in Swine — \$245,720

**Jeffrey Keown** — USDA/NRICGP — Value-added Processed Meats Short Course — \$10,000

**Andrew Benson and Robert Hutkins** — USDA/NRICGP — Genomic Analysis of *E. coli* O157:H7 Populations from Cattle and Humans — \$181,457

**Z B Mayo** — USDA/NRICGP — Sexual Generations and Overwinter Survival of Greenbugs on Wheat Under Field Conditions — \$82,160

**Subramaniam Srikumaran and Ruben Donis** — USDA/NRICGP — Simultaneous Induction of Cytotoxic T-lymphocyte and Antibody Response to BHV-1 — \$248,737

**Clayton Kelling and Ruben Donis** — USDA/NRICGP — Virulence Determinants of Genotype 2 Bovine Viral Diarrhea Virus Isolates — \$181,134

**Julia C. Torquati, Marcela Raffaelli and Kathleen M. Prochaska-Cue** — NSF — Physical, Psychosocial and Economic Adaptation of Homeless Families: A Comparison of Models of Resilience — \$409,688

**Gary Yuen and Gerald Horst** — USDA/NRICGP — Ultraviolet Effects on Turfgrass Disease Biocontrol by Applied Bacterial Agents — \$137,534

**James E. Kinder** — USDA/NRICGP — Regulation of LH Secretion to Enhance Ovarian Function and Fertility in Cattle — \$306,676

**Jeffrey Rollins** — USDA/NRICGP — Molecular Analysis of Sclerotial Development in *Sclerotinia sclerotiorum* — \$90,000

**Charles Francis** — USDA/CSREES — Integrated Crop/Livestock Research for Sustainable Systems in Nebraska — \$55,152

**Thomas O. Powers and Allen L. Szalanski** — USDA/NRICGP — Entomopathogenic Nematodes for Biological Control of Filth Flies in Feedlots — \$84,814

**Clinton Jones and Alan Doster** — USDA/NRICGP — Analysis of Apoptosis and Pathogenesis by Bovine Herpes Virus 1 and bICPO — \$178,338

**Milford Hanna** — USDA/CSREES — Industrial Agricultural Products Center — \$59,825

**Bob Volk** — USGS — Base Grant and Information Transfer — \$20,000