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### ARD News December 2002

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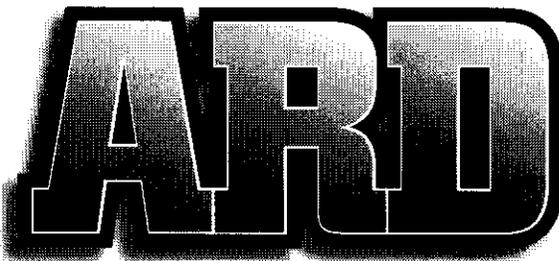


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## Agricultural Research Division News



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

December 2002

Volume 35, Number 8

### Comments from the ARD Office Staff



Dear Colleagues:

The ARD Office staff extend our best wishes to you and your family for a happy holiday season and a great 2003. We hope that this holiday break will be a time of rest, reflection and renewal as we go forward into a new calendar year.

Although the current year has been one of challenge, your accomplishments in research continue to be a source of pride for the University of Nebraska-Lincoln. We have been delighted to feature many of your research findings in news releases, **Research Nebraska**, the **ARD Annual Report**, and **Endeavors**. It has been gratifying to hear that our clientele appreciate your efforts and report that their businesses and quality of life have been improved as a result of your research.

We can look forward to more challenges in 2003 as the state budget situation continues to be a problem. However, we are confident that the ARD faculty will respond to funding shortfalls with continued dedication, and focus on their research, teaching, and extension duties. Our clientele expect a great deal from ARD faculty. There is no doubt that their expectations will be satisfied.

Thanks for all of the cooperation and support that you provided to the ARD Office during 2002. We look forward to serving you in 2003.

The ARD Office Staff

*Happy Holidays*

*Darrell*

*Dale*

*Melnie*

*Miane*

*Dora*



## How to State the Value of Your Research

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*The following article is an excerpt from a white paper sponsored by the National Association of State Universities and Land Grant Colleges (NASULGC), Experiment Station Committee on Organization and Policy (ESCOP). The paper is: McKenzie, David R.; How to State the Value of Your Research, Topic 1, Advocating for Science, a series on Science Communication, March 2002.*

*The white paper is too long to include in its entirety, but excerpts will continue in future issues of ARD News. While the emphasis is on stating the value of your research to potential funding organizations, some of the principles discussed can be valuable in reporting value and impact of research to sponsors and supervisors. The first excerpt follows.*

## How to State the Value of Your Research

by David R. McKenzie

### Introduction

Concerted national efforts to mobilize new and substantial funding for science have recently begun, but agricultural science has not been included in the mix of beneficiaries. The reasons for this omission are several, and they are politically complicated. Among the explanations is the observation that when science leaders are called to national meetings to plan strategies for resource mobilization efforts, agricultural leaders are all too often not invited. Agendas get set for science research that omits agriculture's needs and opportunities.

To reverse this situation the nation's agricultural leadership began a budget development strategy that involved the reorganization of their national associations. And they have reinvented their efforts in advocating for federally appropriated resources. Among these strategies are plans to involve more directly research scientists in telling decision makers about the social, environmental and economic benefits of public investments in agricultural research, and why even greater public investments are needed.

### Points to Consider

Advocating for increased or new resources for research requires an understanding of the perspectives of those who hold the public or private money you are seeking. Let me refer to them as donors, but they may actually be elected or appointed government officials, philanthropists, or private company executives. No matter. They all have common perspective. They want to be assured that:

1. You have helped **them** (not you) complete **their** agenda (not your agenda);
2. That **their** money (it's not really yours) has been well spent so far;
3. That **they** are getting credit for **their** investment (not just you);
4. That the research topic **they** are investing in remains important to them; and,
5. That real progress is being made for **them**.

If you fail to assure these five points in your statement, you have failed to communicate with your donor.

### Some Rules

The tone of your presentation should impart the following five "C's":

**You must be Complimentary:** Take the opportunities in your presentation to thank your benefactors for their support. And, if there are multiple sources of support so much the better. Donors like to know that their money is being "leveraged" by other sources. It validates their investment choice and makes a statement that more is being done with their funds than could be done alone. And, it is human nature to appreciate being complemented, as well as complimented. You should be explicitly appreciative of the support you have received and grateful for being able to do your important work.

**You must be Committed:** In your remarks you should take pains to stress that your commitment to the funded activity is unwavering, and that you will continue no matter what, given continued funding. The situation here is simply one of a donor expecting continuity from the funded activity. If there is a hint of discontinuity, the donor may see other needs for his/her money. You lose.

**You must be Clear:** Avoid, as much as possible, complicated technical terms and disciplinary jargon. Try to tell the story of your research with terms understood by technically informed individuals who are not necessarily experts. For projects that are complex, in biological and/or organizational aspects, consider using the power of images. A complex project structure, research process or complex research outcomes are often more clearly and effectively communicated through well-designed graphics than through the use of textual explanations. Define what messages you want to convey to your audience and develop some clear graphics specifically for that purpose. PowerPoint renders weak the old excuses for not doing this.

**You must be seen as Competent:** Appearance is everything, and being seen as incompetent is a death sentence to a research project's funding. In your statements you must come across as very competent and

**Martin Dickman** — USDA/NRI — Plant Apoptosis and Disease Development — \$320,405

**David Stanley and Gautam Sarath** — Prostaglandins Mediate Insect Cellular Immunity: Molecular and Biomedical Characterization of *Drosophila* Prostaglandin Receptor Sites — \$308,813

**George Meyer and David Jones** — USDA/NRI — Improved Soil, Plant, and Residue Classification Using Machine Vision and Fuzzy Logic for Improved Water Quality — \$373,479

**Jose Payero, Steve Ensley, David Tarkalson, Diana Aga and Julie Schaffer** — USDA/NRI — Fate and Environmental Impact of Antibiotics Applied to Soils Through Animal Manure — \$324,239

**Yiqi Yang** — USDA/NRI — Property Improvement of Polyacide Textile Fibers via Structural Investigation and Process Innovation — \$201,388

**Marjorie Lou** — NIH through UNMC — Up-Regulation of K<sup>+</sup> Channels in the Remodeled Ventricle — \$29,596

**Xun-Hong Chen** — USDA/NRI — Modeling of Streamflow Features Affected by Groundwater Irrigation in the Central Platte Valley, Nebraska — \$343,388

**Albert Weiss** — USDA/NRI — Climate Modeling and Analysis Project (CIMAP) — \$100,000

**Larkin Powell** — USDA/NRI — Breeding Birds in Nebraska's Rainwater Basin: Influence of Landscape Factors, Alternate of Prey Density, and Carnivores on Breeding Success — \$273,396

**Jeffrey Cirillo and Ronald Cerny** — NIH/NAID — Signal Transduction by Legionella in Macrophages — \$1,262,925

**Richard Perrin and Jim Roberts** — USDA/ARS — Economic Evaluation of Switchgrass Grown as a Biomass Energy Crop in the Central and Northern Plains, USA — \$45,000

**Raul Barletta** — USDA/NRI through Oregon State University — *Mycobacterium avium* subsp. *paratuberculosis* Intestinal Invasion — \$115,975

**James Stubbendieck** — National Park Service — Restoration of Threadleaf Sledge — \$29,940

**Loren J. Giesler** — NCIPM through Ohio State University — Rapid Response and Deployment of Management Methods for *Phytophthora sojae* — \$55,326

**John B. Campbell and Philip J. Scholl** — NCIPM through Kansas State University — Management of Stable Fly Populations Developing in Feeding Sites of Round Bales — \$17,280

**Robert G. Wilson, Robert M. Harveson and Gary L. Hein** — NCIPM — Use of patterns of Fructan Metabolism in Roots of Canada Thistle to Develop Integrated Control Strategies in Cropland and Range Ecosystems — \$98,880

**Raul Barletta** — USBARD — Identification and characterization of *Mycobacterium paratuberculosis* Virulence Genes Expressed in Vivo Genes Expressed in Vivo by Negative Selection — \$180,087

**Terry L. Mader and Q. Steven Hu** — NIGEC — Evaluating Models Predicting Livestock Output Due to Climate Change — \$270,000

**Mark Kuzila** — USGS — Rural and Urban Geologic Mapping of Nebraska — STATEMAP — \$220,008

**Susan Tunnell and James Stubbendieck** — USEPA — Grazing as an Alternative Method for Wetland Restoration — \$100,018

**Xun-Hong Chen** — USDA/NRI — Modeling of Streamflow Features Affected by Groundwater Irrigation in the Central Platte Valley, Nebraska — \$349,481

**Oswaldo Jorge Lopez and Fernando A. Osorio** — USDA/NRI — A Sub-Unit Vaccine and Diagnostic Tests for Porcine Reproductive and Respiratory Virus (PRRSV) — \$211,052

**Terry Mader, John A. Harrington and Anne M. Parkhurst** — USDA/NRI — Cattle Responses to Climatic Challenges — \$299,826

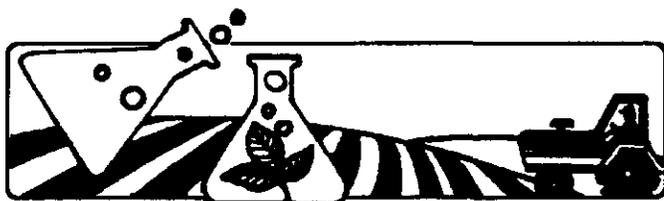
**John L. Lindquist** — USDA/NRI — Ecophysiological Determinants of Corn — Velvetleaf Competition for Nitrogen and Light — \$234,136

**Robert G. Wilson, Robert M. Harveson and Gary L. Hein** — USDA/NRI — Use of Patterns of Fructan Metabolism in Roots of Canada Thistle to Develop Integrated Control Strategies in Cropland and Range Ecosystems — \$200,646

**Donald J. Lee and Alex R. Martin** — USDA/NRI — Gene Sequencing and Expression of Glyphosate's Target Enzyme (EPSPS) in Weed Species — \$197,449

## **Diane says**

Your goals don't start in your head; they start in your heart.



## Grants and Contracts Received October and November, 2002

### Agronomy/Horticulture

Wortmann, Charles — Alan and Irene Williams  
Endowment via UN Foundation \$14,000  
Miscellaneous grants under \$10,000 each 139,472

### Animal Science

Miscellaneous grants under \$10,000 each 17,968

### Biotechnology

Fromm, Michael — UN Foundation 41,583

### Entomology

Miscellaneous grants under \$10,000 each 100,255

### Food Science and Technology

Zeece, Michael — Mussehl Poultry Research  
Endowment via UN Foundation 14,500  
Miscellaneous grants under \$10,000 each 106,925

### Northeast Research and Extension Center

Miscellaneous grants under \$10,000 each 70,750

### Nutritional Science and Dietetics

Zempleni, Janos — UN Foundation 28,835  
Miscellaneous grants under \$10,000 each 3,000

### Panhandle Research and Extension Center

Miscellaneous grants under \$10,000 each 208,925

### Plant Pathology

Miscellaneous grants under \$10,000 each 12,300

### School of Natural Resource Sciences

Miscellaneous grants under \$10,000 each 3,000

### South Central Research and Extension Center

Miscellaneous grants under \$10,000 each 65,200

### Veterinary and Biomedical Sciences

Miscellaneous grants under \$10,000 each 590

### West Central Research and Extension Center

Adams, Donald — Helen Porter Van Spronsen via  
UN Foundation 10,000  
Payero, Jose — UN Foundation 70,000  
Miscellaneous grants under \$10,000 each 24,521

**Grand Total \$931,824**

## Proposals Submitted for Federal Grants

The following is a listing of proposals that were submitted the past few months by faculty for federal grant programs. While not all grants will be funded, we are appreciative of faculty members' outstanding efforts in submitting proposals to the various agencies.

Milford Hanna and Sandum Fernando — USDA/NRI — Development of Oxidatively and Thermally Stable, Polymerization Resistant Industrial Lubricants from Chemically Modified Soybean Oil — \$214,949

Milford Hanna, David Jones and Girish Ganjyal — USDA/NRI — Neural Network Modeling of Food Extrusion Process — \$113,826

Clinton Jones and Alan Doster — NIH — HSV-1 LAT Promotes Reactivation and Cell Survival — \$1,631,250

Shripat Kamble — USDA-CSREES through Michigan State University — Nebraska Pesticide Information Network: Crop-Livestock Profiles and Pest Management Strategic Plan — \$88,124

Ruma Banerjee — NIH — Regulation of Homocysteine-Dependent Redox Homeostasis — \$1,629,340

Amit Mitra — U.S. Wheat and Barley Scab Initiative — Identification and Characterization of Wheat Flower-Specific Promoters — \$40,929

Ruben O. Donis — NIH — Role of Nonstructural Proteins in Pestivirus Virion Assembly — \$1,160,000

Blair Siegfried — USDA/NRI through Southern Illinois University — Mechanism of Pesticide Interactions in Aquatic Organisms: Implications to Watershed Contamination and Ecosystem Health — \$78,884

Michael Zeece, Steve Jones and Ron Cerny — USDA/NRI — Proteomic Analysis of Stress Syndrome in Meat Animals — \$339,086

Leon Higley, Tulio Macedo, Tiffany Heng-Moss, Gautam Sarath, Soundararajan Madavan and John Burd — USDA/NRI — Common Mechanisms of Photosynthetic Reduction from Aphid Injury and Their Implications for Plant Resistance — \$174,033

Robert Hutkins and Randy Wehling — USDA/NRI — Stability and Functional Activity of Prebiotic Oligosaccharides in Foods — \$155,649

Steven Harris — USDA/NRI — Proteomic and Genetic Analysis of Spore Germination in *F. graminearum* — \$296,961

## ARD Budget Reductions – Round 3

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On November 20, 2002, Chancellor Perlman announced his final decision on the budget reductions for round 3 that affects the current fiscal year. As expected, ARD was significantly impacted by this last round of cuts with reductions totaling \$423,547. This amount represents about 21 percent of the reductions experienced by IANR. ARD reductions consisted of the closing of the South Central Research and Extension Center, closing of the West Central Veterinary Diagnostic Laboratory, a portion of the reduction in IANR administration, and a portion of the projected savings from the early retirement program. The largest share of the IANR budget reduction was absorbed by the Cooperative Extension Division (CED) because three of the programs that were closed had significant CED funding.

In the three rounds of budget reductions, ARD had reductions totaling \$961,624. Of this amount, \$554,845 was removed from the FY 2003 budget (current year budget). Obviously, these reductions have impacted ARD's ability to fund research in departments and centers. Some faculty positions have been eliminated as part of the budget reductions and we have been unable to approve recruitment for other open positions because of a need to have adequate cash flow to finish the fiscal year. Although the ARD budget has been reduced, we have not yet achieved the permanent savings through three rounds of budget reductions since some of the reductions are being made halfway through the fiscal year. Thus, temporary funding is required to provide cash flow to compensate for the lack of permanent budget savings until the savings are realized.

If the Nebraska Legislature does not reduce the University of Nebraska budget for FY 2004, IANR should be in a position to release additional faculty positions for recruitment. However, if additional cuts are forthcoming, only the highest priority positions will be released. Thus, it is important that all university employees and their clientele be proactive in informing members of the Nebraska Legislature about the impacts of further budget reductions.

## Recognition of Junior Faculty for Excellence in Research

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The ARD Advisory Council established a program in 1991 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 2002-2003 academic year:

**Dr. Thomas Clemente**, Assistant Professor, Agronomy and Horticulture Department

**Dr. Janos Zempleni**, Assistant Professor, Nutritional Science and Dietetics Department

**Dr. Qu Steven Hu**, Assistant Professor, School of Natural Resource Sciences

Congratulations to Drs. Clemente, Zempleni, and Hu. A call for nominations is issued each year on or about June 1st. We encourage faculty and administrators to nominate deserving junior faculty in their units.

## Undergraduate Honors Research Program

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Funds for the FY 2002-2003 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. Four additional proposals were received and funded. The following students have received funding:

**Charles Frost** (Agricultural Economics Department) \$2,500  
Researchers: Drs. Scott Hygnstrom and Bruce Johnson  
"Identification and Control of Economic Damage Due to Black Bears (*Ursus americanus*) in the United States"

**Jamie DeRoin** (Animal Science Department) \$2,500  
Researcher: Dr. Merlyn Nielsen  
"Stress Hormone Responses in High, Low and Control Heat-Loss Mice Reared in Three Environmental Temperatures"

**Blake Hamby** (Animal Science Department) \$2,500  
Researcher: Dr. Jess Miner  
"Conjugated Linoleic Acid Dependence on Linoleic, Arachidonic, and Linolenic Acids in Mice"

**Jodi Harper** (Biological Systems Engineering Department) \$2,500  
Researcher: Dr. Dennis Schulte  
"Sediment Trapping by Beaver Dams in Small Streams"

prominent scholarly work. Priority will be given to non-tenured tenure-track faculty and to other eligible faculty who propose projects of high promise and who make a compelling case that Layman funding is critical to their success. Awards may be made for pilot projects, prototype development, faculty development, and preliminary educational and public service programs. Award recipients are expected to actively pursue external funding sources and, where appropriate, submit a proposal for external funding within 18 months of receipt of the award. RFPs are issued about **December with deadline due in January — awards issued about May 1st.**

#### ***University of Nebraska Foundation***

The University of Nebraska Foundation grant is for equipment and information technology. The four campuses of the UNL system are eligible to compete for these grants. The goal of this program will be to strengthen UNL's priority areas through the purchase of needed information technology and equipment, with an emphasis on interdisciplinary collaboration among departments, colleges and other campuses. RFPs are issued and a letter of intent is to be submitted **March 1st** to the Vice Chancellor for Research and the proposals by the **middle of March** to the relevant Deans.

#### ***Willa Cather and Charles Bessey Professorships***

This professorship was established to recognize distinguished scholarship and creative activity. Any UNL full professor, regardless of discipline, who does not currently hold another named professorship or chair, is eligible to be nominated or apply. A faculty member may not hold a Cather or Bessey Professorship and another named professorship or chair simultaneously. The professors will receive a \$2,500 annual stipend. Nominations and applications should be submitted to the Office of Academic Affairs by the **middle of October.**

#### ***Othmer Fellowship***

Othmer Fellowships are intended to assist in recruiting **exceptional** scholars who are seeking a terminal degree (Ph.D., M.F.A.). Othmer Fellows will receive, in addition to the departmental assistantship, a \$7,500 fellowship per year. Othmer Fellowships are renewable for up to three years, given continued excellent progress toward the degree. At the end of the three-year fellowship period, Othmer Fellows are entitled to compete for other fellowship funding. **After this year, the call for applications will be sent in September and notification will be made early in the fall semester**

#### ***Chancellor's Doctoral Fellowship***

Chancellor's Doctoral Fellowships are designed to assist departments with the recruitment of superior graduate students by adding fellowship funds to an assistantship. These fellowships are for \$3,000 and are automatically renewable for a second year, given excellent progress toward the degree. All newly admitted doctoral students are eligible. **After this year, the call for applications will be sent in September and notification will be made early in the fall semester.**

#### ***Richard H. Larson Graduate Minority Fellowship***

Richard H. Larson Minority Fellowships are designed to assist departments with the recruitment of superior graduate students from racial/ethnic groups under-represented in higher education (i.e., African-American, Hispanic or American Indian students) by adding fellowship funds to an assistantship. These fellowships are for \$2,500 and are automatically renewable for a second year, given excellent progress toward the degree. Larson fellowships may be offered in combination with other recruiting fellowships (e.g., Othmer or Chancellor's) where applicable. All newly admitted graduate students are eligible. **After this year, the call for applications will be sent in September and notification will be made early in the fall semester.**

#### ***Student Assistantships in Research and Scholarship (STARS)***

The Student Assistantship in Research and Scholarship (STARS) program is designed to assist departments with the recruitment of racially/ethnically under-represented students, or women interested in pursuing graduate studies in disciplines where they are under-represented. The STARS program aids departmental recruitment of superior graduate students by adding a summer assistantship to a regularly funded departmental assistantship. For the student to be exempt from summer tuition, the departmental assistantship must be large enough during the academic year to provide summer tuition benefits. These assistantships are for \$3,000 and are to be used to support a student during the first summer after matriculation into a full-time program of graduate study (i.e., the summer after the first year of graduate study). **After this year, the call for applications will be sent in September and notification will be made early in the fall semester.**

Anyone with questions about these programs is encouraged to contact the Agricultural Research Division office.

very able to do what you are proposing. Competence can be judged by a donor's direct observations of you as a scientist, and as competence reflected from those with whom you are associated. Thus, there is a need to name your research partners, especially those with sterling reputations.

**You must be Confident:** Rightly or wrongly, a speaker's confidence is seen as a reflection of competence, and thus his or her likelihood for success. And all donors are looking for success. Your presentation must exude your confidence in completing the work, on time and within the budget. If for some reason you are not perceived as confident (e.g., poor public speaking abilities; lack of appropriate language skills), ask someone else to make the presentation for you. Why risk your funding?

And by the way, it is definitely okay to brag. Do as much bragging as you feel comfortable with. If bragging is done correctly, your donor(s) will feel great. It will give them assurance that they got a good return for their money.

## **ARD-Administered Grant and Awards Programs**

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The Agricultural Research Division administers several grant and recognition programs using ARD funds, NU Foundation funds and funds from other sources. Some of these are awarded annually on a regular schedule and some on an ad hoc basis as funds permit. The following summary explains some of these programs and how they are currently being administered.

### **NU Foundation Endowments**

#### ***Anna H. Elliott Fund Grant***

Awarded every two years as endowment income permits. Income is about \$60,000 annually and program is oriented to plant science research directed to western Nebraska. RFP issued about **December 15th**, awarded in **odd-numbered** years.

#### ***Sampson Range and Pasture Management Endowment***

Awarded every two years as endowment income permits. Three research, extension or teaching projects are funded every two years. The program is directed at pasture and rangeland management and the study of native grasses. RFP issued about **January 15th**, awarded in **odd-numbered** years.

#### ***Mussehl Poultry Research Endowment***

Awarded every two years as endowment income permits. Income is about \$25,000 per year.

Research in poultry management, health, nutrition, physiology, waste management and utilization, and poultry product research is supported by the endowment. RFP issued about **June 1st**, awarded in **even-numbered** years.

#### ***Widaman Trust Graduate Fellowship***

Awarded annually. \$2,000 added to stipend of outstanding graduate students. Nominations are due about **May 10th**.

#### ***Hardin Distinguished Graduate Fellowship in Plant Stress Physiology***

Awarded annually. \$2,000 added to stipend of a selected student plus \$1,000 to the department to assist student's research. One fellowship awarded annually. Nominations are due about **May 10th**.

#### ***John and Louise Skala Fellowship***

Fellowships may be awarded to graduate students who have been accepted into either a M.S. or Ph.D. program and have been offered a graduate assistantship. These funds are to be used to supplement existing assistantships (GRA/GTA) with offers of \$3,000 for M.S. and \$5,000 for Ph.D. students. Fellowships constitute an award based on academic and scholastic achievement or promise, cannot be associated with any service requirement, and will be awarded only to students doing research in the area of industrial uses of agricultural commodities. Cannot be candidate for Widaman, Milton Mohr, or Farmer's National if a candidate for Skala Award. Industrial Ag Products makes selection of recipients. Nominations are due about **May 10th**.

#### ***William G. Whitmore Travel Grant***

Awarded annually. In accordance with the donor instructions, this program will support attendance to professional society meetings in the field of animal science, agricultural education and leadership, and veterinary and biomedical sciences. Grants under this program are limited to a maximum of \$500 per individual per fiscal year. This includes transportation (which is not to exceed coach class airfare), registration, lodging, meals, etc. Deadline for submissions are **May 15th** and **November 15th**.

#### ***Williams Endowment***

Awarded every two years. Project proposals should relate to the "management of surface water run-off and erosion from agricultural land to achieve total maximum daily loading (TMDL) compliance." The specific focus of the research may be changed in future solicitations as emerging priorities change. Deadline for submission is **May 15th**.

**Mary and Charles C. Cooper/Emma I. Sharpless Fellowships**

Jointly awarded on an annual basis by ARD and CASNR. \$1,000 or \$2,000 added to stipend of selected graduate students for assistance in recruitment. Applications are accepted throughout the year.

**Junior Faculty Excellence in Research Recognition (Ruth E. Branham Endowment)**

Up to two junior faculty recognized per year. Recognition consists of certificate, plaque, and \$3,000 for use in research or professional development. Call for nominations is issued on **June 1st**.

**Burlington Northern Water-Science Endowment**

Awarded biannually for water science research. Approximately \$60,000 is available every two years. RFP issued about **January 15th**, awarded in **even-numbered** years.

**Helen Porter Van Spronssen Charitable Trust**

The annual income from the Trust is to partially support (\$10,000) one GRA in the range and livestock research program. This will be a named assistantship assigned to an approved ARD project in range and livestock research at the Gudmundsen Sandhills Laboratory. Awarded every two years. RFP issued about **February 1st**, awarded in **odd-numbered** years.

**Ralph H. Bainbridge Memorial Fund**

The annual income of approximately \$5,000 will be used to partially support research in beef production and grassland management. Grants will be awarded on a competitive basis to interdisciplinary teams. Matching funds will be required. Awarded every two years. RFP issued about **February 1st**, awarded in **odd-numbered** years.

**Agricultural and Water Research Fund**

Interest income will be used in conjunction with the current Burlington Northern Water-Science Endowment to enhance biannual awards in water science and irrigation management research. This is awarded every two years in concurrence with the Burlington Northern Water-Science Endowment. RFP issued about **January 15th**.

**Jorgensen Fund**

The interest income will be used to partially support a GRA for a graduate student conducting research at the Gudmundsen Sandhills Laboratory on beef-range systems. Awarded every two years. RFP issued about **February 1st**, awarded in **odd-numbered** years.

**Channing B. and Katherine W. Baker Fund**

Interest from the endowment is used to support one GRA in the areas of (1) soil conservation and management or (2) breeding and genetics of food and feed grains. Preference in awarding the GRA will be given to Ph.D. students. Awarded every two years. RFP issued about **February 1st**, awarded in **odd-numbered** years.

**ARD Discretionary Funds**

**Interdisciplinary Research Grants**

Awarded annually depending on availability of funds. Two or three grants awarded for up to two years duration and for up to \$20,000 annually. RFP issued about **February 1st**.

**Graduate Student Recruitment Funds**

Awarded as requested by departments. Up to two per department per calendar year. Award pays up to 50 percent of expenses or \$200 per student. Purpose is to reimburse recruitment visits to UNL for students offered assistantships.

**ESCOP/ACOP Leadership Development Course**

One or two faculty members are selected for participation each year. Award consists of tuition and travel expenses associated with ESCOP/ACOP Leadership Development Course. Participants spend about 10% of their time serving as administrative interns in ARD. Request for applications is issued in early **January** — **application deadline is early February**.

**ARD/State Budget Funds**

**ARD Research Equipment Awards**

Awarded annually, as provided in state appropriations. Approximately \$225,000 awarded annually to all ARD units, according to prioritized requests. RFPs are issued about **September 1st**.

**Undergraduate Honors Student Research Program**

Awarded annually. Approximately \$52,000 awarded each spring to honor students conducting research with a faculty member holding an ARD appointment. Students receive a maximum of \$2,500 for supplies and expenses and/or as a stipend. RFPs are issued about **April 1st** and **September 1st**.

**UNL-Wide Competitions**

**Layman Trust Fund Awards**

The Layman Awards are aimed at providing seed money for projects that will enhance the grantee's ability to obtain external funding or produce