ARD News December 1994
SEASON'S GREETINGS

The Agricultural Research Division extends to all faculty and staff our best wishes for a joyful holiday season and a productive new year.

This past year has been one of great success in terms of grant and contract funding received, outputs from our research programs, graduate students educated, and national recognition of our faculty and administrators. These achievements are the result of creative and dedicated efforts of faculty and staff. We recognize and appreciate your accomplishments and wish to commend you on behalf of the people of Nebraska.

Thanks for helping make our administrative activities less demanding. We appreciate your professional approach to dealing with issues such as the review of your colleagues’ research project outlines and manuscripts, preparation of grant proposals, completion of annual research reports, and service on committees. Your willingness to approach these activities with diligence and good humor makes our jobs more enjoyable. We also appreciate the positive manner in which you interact with our office. Keep up the good work in 1995.

INDIRECT COST RECOVERY BY ARD UNITS DURING FY 1994

Given below is a listing of the indirect cost recovery distributed to units that resulted from grants and contracts awarded to ARD faculty during FY 1994. About 41.5 percent of the total indirect costs generated by our units was returned to ARD for further allocation. Two-thirds of the indirect costs returned to ARD were allocated to the unit whose faculty received the grants that generated the indirect cost recovery. These funds may be used to enhance research programs within the unit at the discretion of the unit administrator.

The remaining one-third of indirect cost recovery provided to ARD is used to fund renovation of research facilities on an IANR-wide basis. Units not listed below did not generate indirect cost recovery during FY 1994.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Amount Returned to Unit, $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Economics</td>
<td>3,151</td>
</tr>
<tr>
<td>Agricultural Meteorology</td>
<td>37,551</td>
</tr>
<tr>
<td>Agronomy</td>
<td>46,177</td>
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<tr>
<td>Animal Science</td>
<td>10,952</td>
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<tr>
<td>Biochemistry</td>
<td>73,056</td>
</tr>
<tr>
<td>Biological Systems Engineering</td>
<td>3,073</td>
</tr>
<tr>
<td>Biological Systems Engineering (Tractor Test)</td>
<td>3,151</td>
</tr>
<tr>
<td>Biometry</td>
<td>682</td>
</tr>
<tr>
<td>Entomology</td>
<td>9,601</td>
</tr>
<tr>
<td>Food Science and Technology</td>
<td>9,539</td>
</tr>
<tr>
<td>Forestry, Fisheries and Wildlife</td>
<td>23,561</td>
</tr>
<tr>
<td>Great Plains Region Center Global Environmenal Change</td>
<td>7,703</td>
</tr>
<tr>
<td>Horticulture</td>
<td>8,322</td>
</tr>
<tr>
<td>Industrial Ag Products Center</td>
<td>2,289</td>
</tr>
<tr>
<td>Northeast Research and Extension Center</td>
<td>1,401</td>
</tr>
<tr>
<td>Nutritional Science and Dietetics</td>
<td>1,144</td>
</tr>
<tr>
<td>Plant Pathology</td>
<td>28,564</td>
</tr>
<tr>
<td>Veterinary and Biomedical Sciences</td>
<td>16,167</td>
</tr>
<tr>
<td>Water Center</td>
<td>8,358</td>
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The total indirect cost recovery generated by ARD units increased by 38 percent from FY 1993 and 78 percent from FY 1992. This increase resulted primarily from improved grant activity by faculty members, rather than from an increase in the percent of indirect cost recovered on grants. Grants awarded to ARD faculty generated $1,038,311 in indirect costs and ARD received $430,523 to improve research programs.

It is the policy of the University of Nebraska-Lincoln Institute of Agriculture and Natural Resources not to discriminate on the basis of sex, age, handicap, race, color, religion, marital status, veteran’s status, national or ethnic origin or sexual orientation.
USDA REORGANIZATION

The reorganization of the U.S. Department of Agriculture is complete. Figure 1 gives the major divisions of the new USDA. University-based research, extension, and education programs will be administered by the Cooperative State Research, Education and Extension Service (CSREES). This new organization represents a merger of the old Cooperative States Research Service and the Extension Service.

The CSREES Administrator reports to the Under Secretary for Research, Education and Economics, as do the Administrators of the Agricultural Research Service, Economic Research Service, and National Agricultural Statistics Service. Dr. William Carlson is the Acting Administrator of CSREES and Dr. Dean Plowman is the Acting Under Secretary for Research, Education and Economics.

Figure 1. U.S. Department of Agriculture Headquarters Organization

The organizational structure for CSREES is given in Figure 2 on the next page. Most activities such as research project outline approvals, departmental program reviews, and administration of special grants will be carried out by staff in the four subject matter divisions. Regional research programs will be managed by the "Partnerships" division. National Research Initiative activities will be carried out by staff in the "Competitive Research Grants and Awards Management" division.

The CSREES mission is "to work with partners and customers to advance research, extension, and higher education in the food and agricultural sciences and related environmental and human sciences to benefit people, communities and the Nation."
NEW ARD PUBLICATIONS

During the past year, the Agricultural Research Division has been developing and updating publications used in our public information efforts. We have recently published a new issue of *Endeavors*. This eight-page publication provides brief accomplishment reports from many of our research programs. We use *Endeavors* with decision-makers, support groups, and clientele to demonstrate that investments in agricultural, natural resources, and family sciences research have high payoffs.

“Pioneering the Future” is the theme for a new brochure being developed that describes the five Research and Extension Centers and the Agricultural Research and Development Center. This is the first time that a single brochure has been prepared that describes the organization, facilities, and programs at our major off-campus research locations. We have also used the “Pioneering in Future” theme for the new version of the ARD Fact Sheet. The new Fact Sheet is more attractive and reader friendly than the previous version and will find widespread use with clientele, candidates for positions, and support groups.

Copies of these publications may be obtained from your unit administrator or the ARD office. We would be pleased to receive your comments regarding these new publications.

DEVELOPMENT OF GRADUATE EDUCATION PROGRAMS

Given below is data on the growth of graduate education programs in CASNR units during the past five years. There has been a steady increase in the number of graduate students studying for M.S. and Ph.D. degrees. The total number of women in graduate programs has increased from 109 in 1990-91 to 158 in 1994-95. International students increased from 38 percent of graduate students in 1990-91 to 45.5 percent in 1994-95.

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</thead>
<tbody>
<tr>
<td>Ag Economics</td>
<td>30</td>
<td>30</td>
<td>29</td>
<td>36</td>
<td>36</td>
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<tr>
<td>Ag Leadership, Education and Communication</td>
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<td>14</td>
<td>9</td>
<td>18</td>
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<tr>
<td>Ag Meteorology(1)</td>
<td>(14)</td>
<td>(12)</td>
<td>(12)</td>
<td>(16)</td>
<td>(16)</td>
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<tr>
<td>Agronomy</td>
<td>158</td>
<td>164</td>
<td>163</td>
<td>172</td>
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<tr>
<td>Animal Science</td>
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<td>18</td>
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<td>22</td>
<td>28</td>
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<tr>
<td>Biological Systems</td>
<td>26</td>
<td>38</td>
<td>42</td>
<td>51</td>
<td>65</td>
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<tr>
<td>Engineering</td>
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<td>5</td>
<td>7</td>
<td>20</td>
<td>16</td>
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<tr>
<td>Biometry</td>
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<td>35</td>
<td>43</td>
<td>42</td>
<td>39</td>
<td>48</td>
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<tr>
<td>Food Science and Technology</td>
<td>13</td>
<td>17</td>
<td>27</td>
<td>35</td>
<td>42</td>
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<tr>
<td>Forestry, Fisheries and Wildlife</td>
<td>21</td>
<td>24</td>
<td>21</td>
<td>22</td>
<td>21</td>
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<tr>
<td>Horticulture</td>
<td>17</td>
<td>18</td>
<td>12</td>
<td>12</td>
<td>16</td>
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<tr>
<td>Plant Pathology</td>
<td>26</td>
<td>36</td>
<td>41</td>
<td>34</td>
<td>39</td>
</tr>
</tbody>
</table>

\(1\) Graduate degree programs are not offered so degrees are obtained from other departments. Numbers are not included in the total.

Total: 461 516 512 572 596
ARD ADMINISTERED GRANT AND AWARDS PROGRAMS

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. Elliot Fund Grants
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 Dec. 15.

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 Jan. 15.

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 is issued about June 1.

Widaman Trust Graduate Fellowship
Awarded annually. $2,000 added to stipend of outstanding graduate students. Nominations are due about May 10.

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 10.

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 1.

Burlington Northern Water-Science Endowment
Awarded on an annual basis for water science research. Approximately $30,000 is available annually. RFP is issued about Jan. 15.

ARD/International Programs Indirect Cost Funds

ARD Foreign Travel Awards
One or more grants of up to $1,000 each awarded. $3,000 to $5,000 available annually for research-related foreign travel for professional development opportunities (not for professional society meetings.) RFP issued when funds are made available.

ARD Research Facility Renovation Funds
Funding is provided to units for renovation of research facilities. Amount of funding available depends on indirect cost recovery within IANR units. Requests are received from unit administration throughout the year.

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 Feb. 1.

Innovative and High Risk Research Program
Awarded annually depending on availability of funds. The purpose is to provide initial funding for innovative research that will lead to extramural grant proposals. $15,000 will be provided for these one-year projects. Applications accepted anytime during the year although call for proposals will be issued about June 1. Evaluations of proposals will occur about Oct. 15, Jan. 15, April 15, and July 15 each year.

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.

SAES Leadership Development Course
One or two faculty members are selected for participation each year. Award consists of tuition and travel expenses associated with SAES Leadership Development Course. Participants spend about 10 percent of their time serving as administrative interns in ARD. Request for applications is issued about Feb. 1.

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. RFP issued about Sept. 1.

Other Programs Coordinated by ARD

Layman Awards (NU Foundation Funds)
Awarded annually for research support. Size of awards vary from $1,000 to $5,000. RFP issued about Oct. 1.
NU Foundation Grants (NU Foundation Funds)
Awarded annually for equipment purchase and support of special programs. Size of awards vary from $10,000 to $50,000. RFP issued about March 1.

Nebraska Bankers Association Grants
Awarded annually for research/education programs relating to economic development. Size of awards vary from $5,000 to $20,000. RFP issued about Sept. 1.

Nebraska Commodity Check-off Board Grants
Annual research grants usually in the $5,000 to $20,000 range. RFP issued about Oct. 1.

The Agricultural Research Division also helps process research grant proposals directed to federal and state agencies, foundations, corporations, and private organizations. The Dean for Agricultural Research has final sign-off authority for all proposals directed to USDA agencies. Proposals to other agencies and organizations are sent by ARD to the Office of Sponsored Programs for final processing.

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

SPECIAL RESEARCH GRANT PROGRAM AWARDS

Layman Awards
IANR faculty submitted 13 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. Eight 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.

Three proposals submitted by ARD faculty were funded:

David Holshouser, Northeast Research and Extension Center and Agronomy Department, Cropping Systems for Returning Conservation Reserve Program Acres to Production, $5,000.

Blair Siegfried, Entomology Department, Biochemical Monitoring of Aquatic Contamination Using the Cytochrome P450 System of the Black Fly, Simulium Vittatum, $5,000.

Raul Barletta, Veterinary and Biomedical Sciences Department, Cell Wall Targets for Drugs Against Pathogenic Mycobacteria, $5,000.

Innovative/High Risk Research Program

Three proposals were submitted for consideration by the Innovative and High Risk Research Program during the past quarter. This program is designed to fund very innovative research projects with the objective of developing data that can be used to support requests for grants from federal agencies. These proposals can be submitted at any time during the year. The proposals are evaluated quarterly or on an as-needed basis by a subcommittee of the ARD Advisory Council.

The following proposals were funded by the Innovative/High Risk Research program:

Shawn Kaeppler, Agronomy Department, Cloning Differences Between Plant Genomes, $15,000 (second year).

Phyllis Higley and Anne Vidaver, Plant Pathology Department, A PCR Approach for the Detection of Xanthomonas campestris Pathovars in Seed, $15,000.

H. Edward Grotjan, Animal Science Department, Recombinant Bovine Gonadotropins, $15,000.

INDIRECT COSTS: MYTHS, FACTS AND FACILITIES

An article in the Nov. 2, 1994 issue of the Chronicle of Higher Education (Talesnik, G., Dispelling the Myths about Indirect Costs) presented some excellent discussion on current myths and facts about indirect costs on research grants and contracts. The recovery of indirect cost by universities is a continually controversial subject, but the author points out that both research institutions and the federal government clearly recognize that indirect costs are legitimate research costs to help cover the expenses of administrative support and facilities. The following excerpt from that article outlines the myth and fact related to the expenses of administrative support and facilities.

- Myth: Indirect costs pay mainly for administrative bureaucracies that provide little benefit to research programs.
- Fact: Indirect costs include expenses related to facilities as well as to administration, and both sets of costs are important to the success of research programs.

Costs related to the use of facilities and expenses for administrative support now each represent about half of the total indirect costs of university research. Facilities expenses include depreciation and financing costs for buildings and equipment, utilities, maintenance and repairs, and janitorial services. Those costs have nothing to do with administrative bureaucracy and are clearly necessary to provide the buildings and equipment used to conduct research.

Administrative costs include an equally wide range of services: accounting, purchasing, personnel management and legal services, many others. They also include staff support to help institutions comply with federal laws, regulations, and the specific conditions of research grants and contracts, including safeguards for the protection of human subjects and the care and use of laboratory animals.

While one might call these functions "administrative bureaucracy," they are hardly frivolous or unnecessary to the functioning of research.
The maintenance and renovation of facilities is one of the specific uses for recovered indirect cost funds at the University of Nebraska-Lincoln. Facilities enhancement funds from indirect costs are divided between the Office of Vice Chancellor for Research and the Vice Chancellor, IANR. Allocations from these funds are made annually to UNL units for facility maintenance and enhancement. There have been numerous IANR renovation projects funded from this source in recent years including the following:

- Poultry Research Building renovation
- Plant Industry Building renovation
- Entomology Lab renovation
- Publications Storage and Distribution, Warehouse #2 renovation
- Agricultural Communications Building renovation
- Limnology/Aquaculture Research — Service Building renovation
- Biological systems Engineering — Service Building renovation
- Ag Meteorology GRA space renovation
- Biometry renovation
- Mussehl Hall renovation
- East Campus Greenhouse renovation
- Veterinary and Biomedical Sciences lab renovation

These projects are evidence that indirect cost funds are being used to directly benefit IANR programs. It is a significant challenge to maintain our aging research facilities. Indirect funds are a critical source of resources for this purpose.

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**GRANTS AND CONTRACTS RECEIVED OCTOBER AND NOVEMBER, 1994**

**Agricultural Meteorology**
- Easterling, W. — DOE — NIGEC
- Hubbard, K. — USDA
- Miscellaneous grants under $5,000 each

**Agronomy**
- Diestler, D. — U.S. Department of Energy
- Miscellaneous grants under $5,000 each

**Animal Science**
- Calkins, C. — DeKalb Swine Breeders, Inc.
- Calkins, C. — USDA/ARS
- Calkins, C. — Nebraska Beef Council
- Grant, R. and Klippenstein, T. — Lignotech
- Kinder, J. — USDA/CSRS
- Mandigo, R. — North American Rhea Association
- Mandigo, R. — Nebraska Beef Council
- Morrison, M. — USDA/CSRS
- Scheidler, S. — UN Foundation — Mussehl Poultry Research
- Stock, R. — Cargill
- Miscellaneous grants under $5,000 each

**Biological Systems Engineering**
- Clements, L. D. — USDA

**Biometry**
- Miscellaneous grants under $5,000 each

**Center for Rural Community Revitalization and Development**
- Cordes, S. — USDA
- Van der Sluis, E. — USDA

**Center for Sustainable Agriculture**
- Francis, C. — USDA

**Director’s Office**
- Weller, S. — USDA/CSRS

**Entomology**
- Miscellaneous grants under $5,000 each

**Environmental Programs/Water Center**
- Spalding, R. — Upper Big Blue NRD
- Spalding, R. and B. Volk — Lower Platte NRD
- Volk, B. and J. Schepers — USDA/ARS
- Miscellaneous grants under $5,000 each

**Food Processing Center**
- Miscellaneous grants under $5,000 each

**Food Science and Technology**
- Bulterman, L. — Ohio State
- Jackson, D., R. Weibling and B. Johnson — Ohio State
- Miscellaneous grants under $5,000 each

**Forestry, Fisheries and Wildlife**
- Hoagland, K. — EPA
- Hoagland, K. — Nebr. Dept. of Environmental Quality
- Jelinski, D. — EPA
- Kayes, T. — USDA North Regional Aquaculture Center via MSU
- Miscellaneous grants under $5,000 each

**Horticulture**
- Miscellaneous grants under $5,000 each

**Industrial Ag Products Center**
- Ghormade, W. M. and C. L. Weller — USDA
- Hanna, M. — Kellogg Foundation

**Northeast Research and Extension Center**
- Miscellaneous grants under $5,000 each

**Nutritional Science and Dietetics**
- Miscellaneous grants under $5,000 each

**Panhandle Research and Extension Center**
- Miscellaneous grants under $5,000 each

**Plant Pathology**
- Dickman, M. — USDA
- Higley, P. A. Vidaveer and M. Dickman — Rogers Seed Company
- Miscellaneous grants under $5,000 each

**South Central Research and Extension Center**
- Miscellaneous grants under $5,000 each

**Veterinary and Biomedical Sciences**
- Donis, R. — USDA/CSRS
- Jones, C. — USDA/CSRS
- Osorio, F. A. K. Cheung and C. Jones — USDA/CSRS
- Perino, L. — American Cyanamid Company
- Miscellaneous grants under $5,000 each

**West Central Research and Extension Center**
- Lyon, D. and G. Wicks — Washington State University
- Miscellaneous grants under $5,000 each

**Grand Total**
- 5,897,918
NEW OR REVISED PROJECTS

The following station projects were approved recently by the USDA Cooperative State Research Service:

NEB-11-099 (Biological Systems Engineering) Improving Field Productivity and Predicting Energy Requirements of Soil-Engaging Equipment
Investigator(s): R. D. Grisso, M. F. Kocher and L. L. Bashford
Status: New Hatch project effective Aug. 1, 1994

NEB-11-100 (Biological Systems Engineering) Process Scale-Up: Catalytic Partial Oxidation of Erucic Acid to Brassylic Acid
Investigator: L. D. Clements
Status: New competitive grant effective Jan. 1, 1994

NEB-11-101 (Biological Systems Engineering) Program Management and Planning for Advanced Materials from Renewable Resources
Investigator: L. D. Clements
Status: New competitive grant effective Sept. 1, 1993

NEB-12-002 (Agronomy) Improvement and Evaluation of Oat and Barley
Investigator: P. S. Baenziger
Status: Revised Hatch project effective Oct. 1, 1994

NEB-12-174 (Agronomy) Market Quality of Hard Wheat for Domestic and International Foods
Investigator: D. R. Shelton
Status: Revised Hatch project effective Oct. 1, 1993

NEB-13-124 (Animal Science) Molecular Biology of Protein Degradation and Utilization by Prevotella ruminicola
Investigator: M. Morrison
Status: New competitive grant effective Sept. 1, 1994

NEB-14-081 (Veterinary and Biomedical Sciences) Analysis of the Bovine Herpes Virus 1 Latency Related Gene
Investigator: C. Jones
Status: New competitive grant effective Sept. 1, 1994

NEB-14-082 (Veterinary and Biomedical Sciences) Cellular Molecules Mediating Bovine Viral Diarrhea Virus Infection
Investigator: R. O. Donis
Status: New competitive grant effective Sept. 15, 1994

NEB-44-050 (Panhandle Research and Extension Center) Improvement of Proso Millet and Other Crops for Western Nebraska
Investigator: D. Baltensperger
Status: New Hatch project effective Oct. 1, 1994

PROPOSALS SUBMITTED FOR FEDERAL GRANTS

The following is a listing of proposals that were submitted after Oct. 1, 1994 by faculty for federal grant programs. While not all grants will be funded, we applaud the faculty member’s effort in submitting proposals to the various agencies.

Kenneth G. Hubbard — USDA — Project Earthlink: Global Environmental Change Education National Initiative — $30,000

Stephen D. Danielson and Blair D. Siegfried — USDA/OCID/RSED — Glandular Trichome Exudate As An Insect Resistance Factor for Alfalfa — $60,000

Steven S. Waller — USDA — Sustainable Agriculture Research and Education (SARE) Program for the North Central Region — $1,445,140

Steven S. Waller — USDA — Agriculture in Concert with the Environment (ACE) Program for the North Central Region — $292,683

John P. Markwell — NSF — Laboratory Exercises in Plant Biochemistry — $49,708

John P. Markwell and Gautam Sarath — NSF — Chloroplast Thylakoid Protein Phosphatase — $329,567

Nancy M. Betts and Kaye Stanek — National Research Initiative Competitive Grants Program — The Effect of Adult Literacy on Child Nutritional Status — $84,303

Shawn Kaeppler, K. Arumuganathan and Heidi Kaeppler — National Research Initiative Competitive Grants Program — Chromosome Specific Libraries for Maize Genome Research — $269,862

Judy Driskell and Rodney Moxley — National Research Initiative Competitive Grants Program — Effects of Beta-Carotene and Alpha-Tocopherol on Atherosclerosis in Rabbits — $147,411

Diane Says

Never deprive someone of hope; it might be all they have.