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## ARD News February 2002

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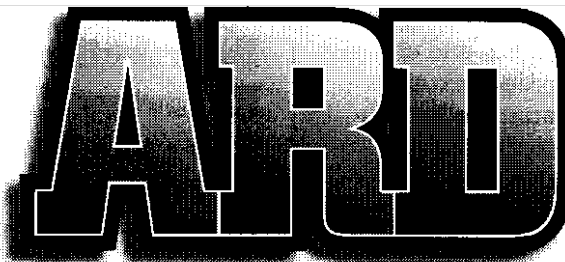


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## Agricultural Research Division News

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February 2002

Volume 35, Number 3

### Comments from the Dean

Dear Colleagues:

During the 2001 session, the Nebraska Legislature addressed the long-standing faculty salary issue within the University of Nebraska. As a result, on July 1, 2001, ARD faculty received average salary increases of 6.3% as part of a four-year effort to bring faculty salaries to the midpoint of our peer institutions. The current downturn in the economy resulted in state tax revenues being lower than projected for most months since June 2001. Realizing the serious situation, Governor Johanns called a special session of the Unicameral in November. The Legislature passed and the Governor signed a rescission bill temporarily removing \$8.3 million from the University of Nebraska budget for the current fiscal year and permanently reducing the University budget by \$11.2 million for the upcoming fiscal year.

The Agricultural Research Division (ARD) was, in turn, impacted by this rescission. In the current fiscal year, ARD returned approximately \$195,000 to the state, and we are currently anticipating that our permanent budget will be reduced by about \$450,000 effective July 1, 2002. Overall, the IANR budget will be reduced by \$1.7 million on July 1, 2002. In the process, IANR will lose 10.8 faculty FTE and 8.4 support staff FTE.

These reductions were difficult to make because all of the increased funds provided by the Legislature had been allocated to faculty and staff salaries effective July 1, 2001, and no flexible funds were available to meet the rescission. In addition, the temporary rescission came in the middle of the fiscal year after half of the budget had been expended, making the reduction twice as difficult. A substantial part of the temporary reduction was absorbed at Central Administration,

using funds allocated for priority program enhancement and other discretionary funds.

In making the budget reductions, ARD has attempted to minimize the impact on our ability to address clientele needs and to maintain excellence in critical research programs. However, the rescission has resulted in the loss of some faculty positions that currently are vacant and the loss of several support staff positions. We regret that these positions have been lost, but this was necessary given the fact that 85% of the ARD budget is allocated to salaries, wages and fringe benefits. We anticipate that some of the high priority faculty positions will be re-established in the future as resources become available.

We recognize that ARD should shoulder a fair share of the rescission assigned to the university and have proceeded to reduce our budget in a most responsible manner. We hope that no further rescissions or budget reductions will be required and anticipate moving ahead to continue the great momentum currently under way in the research program. This will require the dedicated efforts of all faculty members.

Darrell W. Nelson  
Dean and Director

### UNL Indicators of Institutional Quality

Last month Chancellor Perlman briefed the Board of Regents on the proposed UNL Indicators of Institutional Quality. The indicators are "yardsticks" by which the University of Nebraska will measure progress in striving for excellence. "Primary" (P) and "additional" (A) indicators have been proposed for undergraduate student learning; graduate, professional and post-doctoral education; research,



scholarship and creative activity; outreach and engagement; and other contributors to a profile of excellence. Listed below are the proposed indicators for "graduate, professional and post-doctoral education" and "research, scholarship and creative activity":

#### **Graduate, professional and post-doctoral education**

- Number of nationally-competitive awards won by graduate and professional students: General awards of high recognition (P)
- Index of graduates' success on professional licensure examinations (P)
- Number of national publications and presentations by current graduate and professional students (P)
- Number of nationally competitive awards won by graduate and professional students: Discipline or group-specific awards (A)
- Number of nationally competitive post-doctoral awards won by graduate and professional students (A)
- Number of doctorates granted (A)
- Number of post-doctoral appointees in science, engineering and health fields (A)
- Number of master's degrees granted (A)

#### **Research, scholarship and creative activity**

- Federal research dollars expended (P)
- Index of nationally significant scholarly or creative works (P)
- Number of nationally competitive awards, honors and memberships won by faculty members: General awards of high recognition (P)
- Total number of citations achieved (A)
- Number of nationally competitive awards, honors and memberships won by faculty members: Discipline or group specific awards (A)
- Number of leadership positions in leading national academic or professional societies (A)
- Total sponsored dollars awarded (A)
- Number of grant proposals submitted as evidence of multidisciplinary collaboration (A)

Some of the data needed to track progress on the quality indicators are available from universitywide sources. Other data will be developed at the unit level. Thus, it is important that the quality indicators selected be those that can be measured without tremendous effort by unit staff.

Chancellor Perlman is seeking faculty input on the proposed quality indicators. You may send your comments or suggestions to your unit administrator, Dean Darrell Nelson or Vice Chancellor John Owens.

## **Distribution of Indirect Cost Recovery Funds within UNL**

Vice Chancellor Prem Paul has developed a new policy regarding the distribution of facilities and administrative (indirect) costs collected on grants and contracts awarded to UNL faculty. The policy is presented on the Vice Chancellor for Research Web site under the following URL:

<http://www.unl.edu/research/f&apolicy.htm>

Changes from the previous policy include the following:

- One-third of the indirect cost recovered from all UNL grants and contracts will be held centrally for fixed costs of research such as computing, libraries, compliance services, etc.
- One-third of the indirect cost recovered from all UNL grants and contracts will held by the Vice Chancellor for Research and Chancellor for strategic research initiatives.
- One-third of the indirect cost recovered from UNL grants and contracts will be distributed as follows:
  - i. For most single investigator and team grants, indirect cost recovery funds will be distributed to the appropriate college(s)/division(s) whose faculty were awarded the grant.
  - ii. For single investigator or team grants submitted through an approved UNL center or initiative, indirect cost recovery funds will be distributed to the appropriate college(s)/division(s) — 60%; center/initiative — 20%; and department(s) — 20%.
  - iii. For Large Research Initiative grants that are fully competitive and fully indirect cost bearing, often referred to by agencies as "center" grants, the indirect cost recovery funds will be distributed to the center — 70% and the college(s)/division(s) — 30%.

## **Facilities Projects Update**

Several major IANR Facilities renovation and construction projects recently have been completed or are in various stages of planning or construction. Renovations in the Keim Hall soils research laboratory areas have been completed. Laboratory renovations in Ruth Leverton Hall have enhanced the research laboratories of Nutritional Science and Dietetics. Renovation of the sewage sterilization plant serving the Veterinary and Biomedical Sciences animal research facility will allow research on diseases in which the pathogenic organisms must be killed before any sewage discharge is allowed.

A new shop and storage facility has been constructed near Stewart Seed Lab. It serves the needs of the Water Sciences Laboratory field research programs and the Nebraska Forest Service.

Laboratory renovations in Chase Hall have allowed the instrumentation for the Center for Laser Analytical Studies of Trace Gas Dynamics to be relocated from City Campus to East Campus.

A number of other smaller projects have been completed to assist the research and education programs of several units. These projects were funded through multiple sources, including IANR Facilities renovation funds.

A major project just completed is the renovation of the W.P. Snyder Headquarters Building at the West Central Research and Extension Center, North Platte. This \$1.3 million project was accomplished using support from state funds appropriated under LB 1100 as well as funding from several other sources. The project included reconfiguration of offices and labs as well as replacement of lighting, wiring, HVAC and roof.

A major construction project in the planning stage is the Natural Resources and Research Complex. This \$16,255,000 project is funded from both federal and state appropriations. It will house a portion of the School of Natural Resource Sciences programs, the Water Center and the Center for Advanced Land Management Information Technologies (CALMIT).

Following a competitive selection process, an architectural firm and a construction management firm have been contracted to do the project's design and construction management. The architecture firm is Alley-Poyner Architecture, PC of Omaha. The construction management company is The Weitz Company, Inc. with offices in both Omaha and Lincoln.

The construction manager process allows input from the builder throughout the planning process and will result in a facility planned to be built at a guaranteed maximum price, which is the budget available. Both firms have experience with educational facilities as well as numerous private facilities in Nebraska and other states. Representatives from the university users, Alley-Poyner, Weitz, Facilities Management and Planning and IANR are meeting regularly and the planning is currently in the schematic design phase. The intent is to have a schematic design completed by mid-March 2002. The next phase will be design development, in which the detailed design for the entire facility is developed. That is scheduled for completion in late July 2002. The current schedule calls for all planning and pricing to be completed so construction can begin September 1, 2002. If this schedule is maintained, a completion date of January 1, 2004, is anticipated.

Efforts to obtain funding for construction of Phase II of the Natural Resources and Research Complex are

continuing. This will allow consolidation of all IANR natural resource programs in one facility on East Campus. How far in the future this will occur is directly dependent on future state and federal budgets.

## **Priority Program Enhancement Proposals**

During the last academic year, faculty from throughout the campus drafted priority program statements. Initially, more than 120 priority program statements were drafted by UNL faculty, but after review and consolidation 84 priority program statements were presented to the Board of Regents by Chancellor Perlman.

For the current fiscal year, the Board of Regents allocated \$3 million for implementing some of the priority programs. President Smith elected to use the \$3 million to offset a portion of the temporary rescission imposed on the University of Nebraska System during the Legislature's November special session. However, the President and Board of Regents will proceed with implementing the priority program process during the fiscal year starting July 1, 2002. The UNL campus has been allocated approximately \$1.6 million as part of the enhancement funds.

Last fall, authors of the 84 priority program statements were invited to submit preproposals for program enhancement funds. Fifty-six preproposals were submitted. These were evaluated by the Academic Planning Committee, and the committee recommended that full proposals be developed for 10 priority programs. The Chancellor and Vice Chancellors selected six additional priority programs for development of full proposals. These are the priority programs for possible enhancement funding:

- Atomic, molecular and optical physics
- Bioengineering
- Bioinformatics and biological modeling
- Business leadership
- Cather Project
- Community development
- Creative writing
- Enhancing undergraduate education through a commitment to residential learning communities
- Food safety
- Math and science teachers for the 21st century
- Nanoscale science and technology
- Proteomics, genomics and structural biology
- Simulation and computing engineering / information technology and telecommunications
- Survey methodology and statistics
- Youth, families and schools

LANR faculty are providing leadership on several of these proposals and are involved in others. We sincerely hope that these efforts will be rewarded through receipt of enhancement funds.

## North Central SARE Regional Coordinator

The North Central Region Sustainable Agricultural Research and Education (SARE) Program is seeking a Regional Coordinator. This is a 0.5 FTE administrative position funded annually by USDA through the national SARE program. The SARE program supports and promotes sustainable farming and ranching by offering competitive grants and educational opportunities for producers, scientists, educators, institutions, organizations and others exploring sustainable agriculture. The North Center SARE program has an annual budget of approximately \$3 million. Support staff are located in the East Campus Activities Building.

Faculty members interested in the position should contact Dora Dill for a copy of the Position Announcement and access the North Central SARE Web site for the Position Description. Applications for the position are due no later than **February 15, 2002**. The Regional Coordinator assists the North Central SARE Administrative Council and reports administratively to the Dean of the Agricultural Research Division and Dean for Cooperative Extension.

## Food and Agricultural Science Exhibition

The organizers of the Fifth Annual Food and Agricultural Science Exhibition and Capital Hill Reception have chosen to feature the newly developed "flat iron" steak as an example of Land Grant University technology. This steak was discovered by Chris Calkins, professor of animal science, during a muscle profiling study on the beef chuck and round sponsored by the National Cattlemen's Beef Association. These two relatively low value portions of the beef carcass were found to contain tender and tasty muscles that could be made into higher value products. Traditionally, much of the chuck and round has been converted into ground beef.

The display on Capital Hill will demonstrate how the chuck is cut to remove the muscle, describe the attributes of the muscle and indicate how the resulting flat iron steak should be prepared. We hope to provide steak samples for exhibition attendees to taste.

## Scholarly Enhancement Program in CHRFS

The College of Human Resources and Family Sciences has launched a program designed to enhance the scholarly success of CHRFS faculty. The program provides support for faculty in developing fundable research projects and competitive grant proposals. Participating faculty receive a course release, a small amount of research funds and mentoring from either the Associate Dean for Research and Graduate Studies or a professional grant-writing consultant. In return, they agree to set time aside for proposal writing, to meet and critique each other's proposals and to draft a proposal for external funding. Thus, the program incorporates both support and accountability.

The program for individual investigators encompasses three levels. Option 1 (New Investigators) includes new faculty members without extensive track records in publication and grant writing. Option 2 (Preproposal Scholars) includes more seasoned faculty who have identified a potentially fundable project but whose ideas or procedures need additional background work for the project to be competitive. Option 3 (Research Consultation) includes faculty who have identified a potentially fundable project and are ready to draft a proposal for external funding. There is also a multidisciplinary research option for seasoned faculty members interested in developing proposals for large scale, multi-investigator projects.



## Grants and Contracts Received December 2001 and January 2002

<b>Agricultural Economics</b>	
Miscellaneous grants under \$10,000 each	\$ 3,000
<b>Agromony/Horticulture</b>	
P. Stephen Baenziger — Pioneer Hi-Bred International, Inc	20,000
Robert Caldwell — USDA/IFAFS	273,539
Achim Doberman — USDA/IFAFS	227,413
Paul Read — Anna Elliott Fund via UN Foundation	17,175
Roy Spalding — Central Platte NRD	60,000
James Specht — USDA/ARS	53,550
Miscellaneous grants under \$10,000 each	82,660

<b>Animal Science</b>	
Chris Calkins — National Cattlemen's Beef Association	31,200
Galen Erickson — Monsanto Company	36,000
Richard Grant — Monsanto Company	19,908
Miscellaneous grants under \$10,000 each	28,386
<b>Biochemistry</b>	
Vadim Gladyshev — NIH	72,500
Miscellaneous grants under \$10,000 each	3,000
<b>Center for Grassland Studies</b>	
Miscellaneous grants under \$10,000 each	950
<b>Entomology</b>	
John Foster — USDA/ARS	30,000
Miscellaneous grants under \$10,000 each	28,000
<b>Food Science and Technology</b>	
Miscellaneous grants under \$10,000 each	89,427
<b>Northeast Research and Extension Center</b>	
Michael Brumm — Elanco Animal Health	30,500
Miscellaneous grants under \$10,000 each	21,250
<b>Panhandle Research and Extension Center</b>	
Drew Lyon — Anna Elliott Fund via UN Foundation	12,000
Miscellaneous grants under \$10,000 each	100,179
<b>Plant Pathology</b>	
Loren Giesler and Thomas Hunt — Iowa State University	10,995
Miscellaneous grants under \$10,000 each	8,750
<b>South Central Research and Extension Center</b>	
Richard Ferguson — USDA/IFAFA	283,286
Miscellaneous grants under \$10,000 each	24,900
<b>School of Natural Resource Sciences</b>	
James Brandle — Montana Watershed, Inc.	14,000
Steve Comfort, Paul Burrow and Pat Shea — USDA/CSREES	150,000
Ted Elliott — Montana State University	299,981
<b>Textiles, Clothing and Design</b>	
Yiqi Yang — University of Massachusetts-Dartmouth	35,000
<b>Veterinary and Biomedical Sciences</b>	
Raul Barletta — Kuzell Institute, California Pacific Medical Center	69,495
Miscellaneous grants under \$10,000 each	19,295
<b>West Central Research and Extension Center</b>	
Gail Wicks — Washington State University	25,000
Miscellaneous grants under \$10,000 each	5,000
<b>Grand Total</b>	<b>\$2,186,339</b>

## Proposals Submitted for Federal Grants

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The following is a listing of proposals that were submitted after December 2001 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.

**Brian Beecher — USDA/NRI — Function of Wheat and Barley Grain Softness Genes — \$217,772**

**Tom Clemente — USDA/NRI — Characterization of Ds Transposition in the Soybean Genome — \$314,563**

**Yiqi Yang — USDA/NRI — Property Improvement of Poly(lactic acid) Textile Fibers via Process Innovation and Structural Investigation — \$240,597**

**Ismail Dweikat and Sally Mackenzie — USDA/NRI — Investigation of Mitochondrial Genome Dynamics in cms of Pearl Millet — \$362,764**

**Amit Mitra — USDA/NRI — Efficient Inactivation of Gene Expression by Intrinsic Direct Repeats: Mechanism and Utilization — \$229,329**

**David Scott Jackson — USDA/NRI — The Vexing Issue of Starch Solubility — \$123,036**

**Robert W. Hutkins — USDA/NRI — Stability and Functional Activity of Prebiotic Oligosaccharides in Foods — \$141,236**

**Milford Hanna, David Jones and Girish Ganjyal — USDA/NRI — Neutral Network Modeling of Extrusion Process — \$152,147**

**Milford Hanna and Girish Ganjyal — USDA/NRI — Value Added Processing of Sapodilla — \$79,857**

**Konstantinos Giannakas — USDA/NRI — Accounting for Observability, Uncertainty and Payment Mechanism in Agricultural Conservation Program Compliance — \$179,449**

**Randy L. Wehling — USDA/NRI — Measuring Degree of Cooking in Extruded Cereal-Based Products by Near-Infrared Spectroscopy — \$150,298**

**Larkin Powell — U.S. Fish and Wildlife Service — Comparing Sustainability of Grazing in the Nebraska Sandhills: Which Regime is Best for Cattle and Wildlife — \$104,681**

**Marjorie Lou — NIH — Protein-thiol Mixed Disulfides in Cataractogenesis — \$1,286,072**

**Michael Zece, Ron Cerny and Shelly McKee — USDA/NRI — Proteomic Analysis of Factors Associated with Stress Syndrome in Meat Animals — \$246,961**

**Robert Hutkins — USDA/NRI — Biochemical and Physiological Differences Between Pathogenic and Non-Pathogenic Strains of *E. coli* — \$256,628**

**David W. Stanley and Jon Miller — USDA/NRI — Prostaglandins Mediate Insect Cellular Immunity: Biochemical Characterization of Prostaglandin Receptor Sites — \$190,582**

**Dojin Ryu, Lloyd B. Bullerman and Milford Hanna** — USDA/NRI — Efficacy of Extrusion Processing in Reducing Toxicity of Deoxynivalenol and Zearalenone — \$287,587

**Dickey Dee Griffin, Susanne Hinkley and Henry Cerny** — USDA/NRI — Development of a Pre-Harvest Version of the USDA-FSIS Fast Antibiotic Screening Test — \$185,219

**Rhae A. Drijber** — USDA/NRI — Complex Lipid Biomarkers for Improved Quantification of Vesicular Arbuscular Mycorrhizal Fungi in Soil Systems — \$163,784

**Lloyd B. Bullerman, Milford Hanna and Dojin Ryu** — (subcontractor) — USDA/NRI through Iowa State University — Chronic Toxicity of Fumonisin Products Formed by Extrusion Processing of Corn — \$66,225

**Lloyd B. Bullerman, Milford Hanna and Dojin Ryu** — (subcontractor) — USDA/NRI through Iowa State University — Reduction of Fumonisin Acute Toxicity in Swine by Extrusion Processing of Corn — \$66,225

**Clinton Jones and Yange Zhang** — USDA/NRI — Functional Analysis of biCPO, a Bovine Herpesvirus 1 Gene that is a Promiscuous Transactivator — \$320,041

**Thomas Powers** — NSF — Vertical Assemblages of Nematode Species in Tropical Forests of Costa Rica — \$185,840

**Sally Mackenzie** — NSF — Construction of a Physical Map in *Phaseolus vulgaris*: An essential Component for Cross-Comparative and Evolutionary Studies of Legumes — \$3,780,624

**Thomas E. Elthon, Ronald L. Cerny and Gautam Sarath** — NSF — Mitochondrial Proteomics — \$925,199

**Blair D. Siegfried and Lance J. Meinke** — USDA/NRI through University of Maryland — QTL Mapping and Population Structure of Insecticide Resistance in Corn Rootworm — \$98,148

**Raul Barletta** — USDA/NRI through Oregon State University — *Mycobacterium avium* subsp. *paratuberculosis* intestinal invasion — \$114,159

**Lloyd Bullerman and Jitka Stiles** — USDA/NRI — Inhibition of *Fusarium graminearum* Using Biological Control Agents — \$213,332

**Jeffrey D. Cirillo** — USDA/NRI — Role of Entry Mechanisms in Virulence of *Mycobacterium marinum* — \$357,503

**Amit Mitra** — USDA/NRI — Broad-Spectrum Virus Resistance in Transgenic Potato — \$289,920

**Clayton L. Kelling, Ameila R. Woolums, Subramaniam Srikumaran, Ruben Donis and Bruce Brodersen** — USDA/NRI — Apoptosis and Cellular Immunity in BVDV and BRSV Co-Infection — \$406,632

**Subramaniam Srikumaran** — USDA/NRI — Mapping of *Mannheimia (Pasteurella) haemolytica* — \$204,093

**Subramaniam Srikumaran, Clinton Jones and Clayton Kelling** — USDA/NRI — Pathogenicity and Immunogenicity of a Virion Host Shut-Off Gene Deletion Mutant of Bovine Herpesvirus 1 — \$297,885

**Stephen D. Danielson, James R. Brandle and Erin Blankenship** — USDA/NRI — Effects of Vegetational Diversity on Farm Insecticide Use — \$174,537

**Gary Yuen, Martin Dickman and Gautam Sarath** — USDA/NRI — Induced Resistance as a Biocontrol Mechanism — \$256,870

**Michael E. Fromm, Michel R. Gribskiov, Pamela C. Ronald, Wen Y. Song and Jiam-Kang Zhu** — USDA/NRI — A Protein Interaction Database for Rice Protein Kinases — \$6,764,387

**Raul Barletta** — USDA/NRI — Molecular Analysis of a *Mycobacterium paratuberculosis* Colony-morphology Attenuated Mutant — \$292,123

**Fernando A. Osorio** — USDA/NRI — Role of PRRSV-Specific Antibodies in Protective Immunity Against Porcine Reproductive and Respiratory Syndrome Virus Infections — \$299,202

**Terry Mader** — USDA/NRI through University of Missouri-Columbia — Dynamic Responses of Feedlot Cattle Exposed to Cold Stress — \$130,846

**C. William Zanner** — NSF — Collaborative Research: Multi-proxy Reconstructions of Sangamon, Farmdalian and Pleistocene-Holocene Boundary Climates of the Great Plains, and Implications for Future Climate — \$133,159

**Lori A. Allison** — NSF through Cornell University — From Proplastid to Chloroplast: Understanding Plastid Differential in Maize Through Microarray and Proteome Analysis — \$577,460

**Michael E. Fromm, Ismail Dweikat, David S. Jackson and Tom Clemente** — INTSORMIL — Breeding and Biotechnology Traits for Sorghum for Food and Feed Quality Improvements — \$945,000

## **Diane says**

Failure can become a weight or it can give you wings.