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ARD

Agricultural Research Division News

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September 2002 Volume 35, Number 7

Comments from the Dean

Dear Colleagues:

At this point, you are all aware of the IANR budget reductions proposed by Chancellor Perlman. The proposal to close the South Central R & E Center (SCREC) will have a significant impact upon our research programs in south central Nebraska. Although we are keeping the field research facility open, the tenured SCREC faculty will relocate to campus or other research and extension centers. These faculty will continue to have a research and extension focus on issues related to irrigated crop production. Thus, ARD research will continue to address needs of the crop producers in south central Nebraska although the efficiency of conducting research will decrease as a result of the faculty relocation.

Closure of the WCREC Veterinary Diagnostic Laboratory also will impact our ability to provide diagnostic services to the western portion of Nebraska. As a result of the WCREC laboratory being closed, all veterinary diagnostic services will be performed in Lincoln at the main laboratory. Veterinarians and producers will be required to send all necroposy samples to Lincoln for diagnostic tests. In an attempt to improve service provided by the Lincoln laboratory, mail will be picked up on Saturday and some testing will be conducted over the weekend. This will require additional operating funds and some additional personnel for the diagnostic laboratory. We anticipate that enhancement of the campus laboratory will result in continued excellent service for the Nebraska livestock industry.

Partially hidden by all of the budget reduction discussion is a series of very positive developments for the ARD research program. First, ARD faculty obtained a total of $37,064,000 in grant and contract funding from July 1, 2001 to June 30, 2002. This is an increase of almost $12 million over the previous fiscal year. It is a tremendous accomplishment that is a credit to productive ARD faculty. Second, on September 30th it was announced that UNL received a $6 million grant from NSF to establish the Nebraska Plant Genome Center. This center will work with faculty at four other institutions on functional genomics of rice protein kinases. Dr. Michael Fromm, Biotechnology Center Director, also will serve as the Director of the Nebraska Plant Genome Center. Third, it was announced on October 7th that UNL received a $10 million NIH COBRE grant to establish the Nebraska Center for Redox Biology. This center will conduct research on how cells maintain an oxidation-reduction balance (redox homeostatis) and the link between redox homeostatis and complex diseases such as cancer, cardiovascular disease, Alzheimer's disease and cataracts. Dr. Ruma Banerjee, Professor of Biochemistry, will serve as the director of the Nebraska Center for Redox Biology.

The tremendous success of ARD faculty with grants and contracts during the last 18 months clearly shows that our scientists are first class and capable of competing with faculty at any university. It is our hope that these examples will encourage all ARD faculty to become highly aggressive in seeking grant and contract funding. As UNL transitions from a state-supported university to a state-assisted university, an entrepreneurial spirit is essential among all faculty.

Darrell W. Nelson
Dean and Director

UNL Program Enhancement Projects

In 2000, the University of Nebraska Board of Regents asked each of campuses to develop a listing of programs that are of high priority and deserving of enhancement. The process at UNL resulted in identification of 83 priority programs. These programs are described on the Office of Academic Affairs Web site. Effective July 1, 2001, the Nebraska Legislature provided $3 million in new funding for the University of Nebraska priorities. These funds were used on a one-time basis to provide cash flow for the first budget reduction in the fall of 2001. Effective July 1, 2002, UNL received $1.5 million in recurring funds for our priority programs. The UNL academic vice chancellors, working in collaboration with the Academic Planning Committee, identified 16 of the priority programs to receive funding. These priority programs are listed below:

AMO Physics	Tony Starace	Physics and Astronomy
Bioengineering	Glenn Hoffman	Bio Systems Engineering
Bioinformatics	T. Jack Morris	Biological Sciences
Building Leadership	Bruce Avolio	Management
Cather Studies	Sue Rosowski	English
Children, Youth and Schools	Susan Sheridan	Ed Psych
Community Development	Wayne Drummond/ John Allen	College of Architecture/ Agricultural Economics
Creative Writing	Linda Pratt	English
Enhancing Undergraduate Education	Rita Kean	Undergraduate Dean's Office
Food Safety	Steve Taylor	Food Science and Technology
Math and Science Teachers	W. James Lewis	Mathematics and Statistics
Nanoscale Science	David Sellmyer	Physics and Astronomy
Proteomics	Pat Dussault	Chemistry
Simulation, Computing	Byrav Ramamurthy	Computer Science and Engineering
Survey Methodology	Allan McCutcheon	Gallup Research Center

We are pleased that ARD faculty have a leadership role in three of the priority programs (bioengineering, community development, and food safety). ARD faculty also are involved in three other priority programs (bioinformatics; children, youth and schools; and proteomics). Program leaders are currently working with Vice Chancellor Edwards to develop implementation plans for their programs. Funds will become available for the programs as the implementation plans are approved.

UNL Facilities and Administrative (F & A) Cost Policy

On August 21, 2002, Vice Chancellor Prem Paul issued the official UNL facilities and administrative cost policy. Although this policy does not please all faculty members, the flexibility provided in the policy will be workable for most of the ARD research projects. We ask all faculty members to become familiar with the policy and to ensure that facilities and administrative costs are considered when discussing grants and contracts with private industry. Please contact the ARD office if you have any questions about the policy. The policy is reprinted below for your reference:

> The University of Nebraska Policy is to fully recover the federally negotiated Facility and Administrative rate on all grants and contracts. This rate is as follows:
> Research: IANR 45% [Others 44%]
> Cooperative Extension: 36%
> Instruction: 46%
> Off campus rate: 26%

- **State agencies:** F & A cost recovery will be 10% of total direct costs grants and contracts. Full federal rates will apply for grants involving federal pass-through funds.

  For grants and contracts with the Nebraska Department of Agriculture, no F & A will be charged for FY03.

- **Local governmental agencies:** F & A cost recovery will be 10% of total direct costs.

- **Natural Resource Districts:** No F & A will be charged at this time.

- **Commodity Boards:** No F & A cost recovery will be charged at this time.

- **Foundations and non-profit organizations:** Full federally negotiated F & A rates will be charged unless the rate is capped by a formal policy of the organization.

- **Industry and for-profit organizations:** Full federally negotiated F & A rates will be charged on all grants and contracts. The following special situations are in effect as part of a phase-in to full federal rates:

(1) Routine research grants/contracts that generate data and information of importance to the sponsor and require the processing by the Office of Research that have not been recovering full indirect cost at this time will have a minimum 25% F & A cost recovery for FY 2003, and full federal F & A cost recovery for FY 2004 and beyond. To request partial waiver of F & A, a request with signatures of department chair and research dean should be submitted to Dr. Lisa Crockett, Associate Vice Chancellor.

(2) Service contracts that involve efficacy trials of registered products, don't require a specific report to the sponsor, and generate information of importance to clientele that is delivered through Cooperative Extension will be charged 10% F & A costs for July 1, 2002 to December 31, 2002; 15% F & A costs for January 1, 2003 to June 30, 2003; and 25% F & A costs for the period after July 1, 2003. The Agricultural Research Division will determine if the industry contract is a "service" to clientele or is a routine research grant/ contract.

- **Gifts from industry or private individuals:** No F & A costs will be assessed on gifts but such funding should not have any strings attached. If a company provides a protocol, requires a report, or recommends studies or treatments, these funds will not be considered to be gifts.

Federal Project Reporting - Just what is an SY, PY, and a TY?

Official multistate research projects require that participating faculty complete a participation information form which is Appendix E as found in the Multistate Research Project Guidelines. This form has columns requesting personnel commitments for SY, PY, and TY. The ARD office receives numerous questions as to how these columns are to be completed. The following information is provided to assist faculty in completing these for future projects.

SY stands for Scientist Years, PY for Professional Years, and TY for Technical Years. The definitions of each are below. The participant is to enter the percentage of time (expressed as a decimal fraction) of personnel working on the project in each of those categories. For example, if the faculty member is planning to devote 15% of his/her research appointment to the project, the FTE or Scientist Year (SY) would be 0.15.

In the same manner, if there are other staff with college degrees and graduate students working on the project, the FTE for all of these should be totaled and entered into the PY column. Two graduate students with one-half time appointment and one technician working half time on the project, would result in an FTE of 1.5 to be entered into the PY column.

The project also asks for non-degree staff time devoted to the project and the FTE for these to be totaled and entered into the TY column.

Listed below are more complete definitions of each of these categories.

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 the 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, aids, and laboratory assistants assigned to the project.

ARD Advisory Council Membership Change

Dr. Ray Supalla, Agricultural Economics Department, has replaced Dr. Shelly McKee-Hensarling, Food Science and Technology Department, on the ARD Advisory Council as the representative for District 1. Unfortunately, Dr. McKee-Hensarling has left UNL for a position at Auburn University. Dr. Supalla was one of the candidates on the ballot as representative for District 1 and we are pleased to welcome him to the ARD Advisory Council. Dr. Supalla will serve a three-year term that started July 1, 2002.

Research Nebraska Receives Honors

ARD's Research Nebraska magazine recently earned honors in a national competition during the August International Agricultural Communicators in Education conference. ACE is a professional organization for land-grant university communicators.

The magazine received a Silver Award from ACE in the magazines and periodicals category of its 2002 national communications contest. Magazines were judged on editorial quality, design, readability, appearance and reproduction quality. Those receiving recognition from Communications and Information Technology were Linda Ulrich and Vicki Miller, co-editors; Gary Goodding, designer; and Brett Hampton, photographer.

In the critique, the judge wrote: "The writing explains sophisticated science understandably. The photos were excellent ... the graphics were clear and contributed to the articles."

Stephen Russell Grant Writing Workshop

The University has entered into a two-year agreement with *Grant Writers' Seminars and Workshops, LLC* (Dr. Stephen Russell, owner) to identify strategic external funding opportunities and improve faculty grantsmanship. It is our hope that this partnership will result in increased research funding at UNL and provide greater opportunities for interdisciplinary collaboration among faculty members.

Twenty-six UNL faculty members are participating in a workshop titled, "Write and Submit a Competitive Grant Application." Eleven faculty members from IANR have made the commitment to participate in this workshop and develop a proposal for external funding during the next four to six months.

Mussehl Endowment

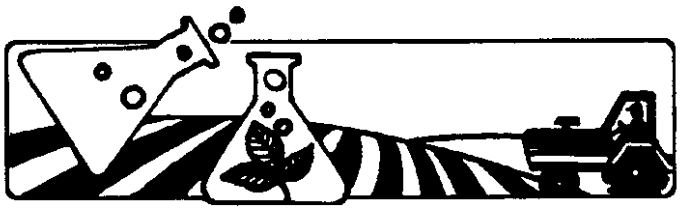
Four proposals were submitted for the Mussehl Endowment. This substantial endowment was established in the University of Nebraska Foundation by the Mussehl Estate to support poultry research programs at UNL. Projects eligible for support from the Endowment include poultry management, health, nutrition, physiology, waste management and utilization, and poultry product research. The following proposals were funded:

Michael Zeece Food Science and Technology
Steve Jones Animal Science Department
Mary Beck Animal Science Department
Sheila Scheideler Animal Science Department
"Proteomic Analysis of Stress Syndrome in Turkeys"
Funded: $14,500 September 1, 2002 - July 30, 2003

Sheila Scheideler Animal Science Department
Leanne LaBrash Animal Science Department
"Fasting vs. Non-fasting Milt Regimes and Cystine Requirement for Optimum Second Cycle Feather Growth"
Funded: $14,420 September 1, 2002 - August 31, 2003

Sheila Scheideler Animal Science Department
Mohammad Jalal Animal Science Department
"Maintenance Energy Requirement of the Laying Hen as Affected by Cage Density and Diet ME Density"
Funded: $10,573 September 1, 2002 - August 31, 2003

Sheila Scheideler Animal Science Department
Mohammad Jalal Animal Science Department
"Predicting Metabolizable Energy Intake of Laying Hen Strains Using Mathematical Models"
Funded: $16,840 September 1, 2002 - August 31, 2003



Grants and Contracts Received August and September 2002

Agronomy/Horticulture
Miscellaneous grants under $10,000 each $17,500

Animal Science
Scheideler, Sheila — Mussehl Poultry Research Endowment through UN Foundation 16,840

Biochemistry
Gladyshev, Vadim — University of Illinois-Chicago 15,000

Biological Systems Engineering	
Brand, Rhonda — Association of American Medical Colleges	73,750
Martin, Derrel and **Jose Payero** — Nebr. Dept. of Natural Resources	185,703
Miscellaneous grants under $10,000 each	3,300
Biometry	
Eskridge, Kent — Nebr. Dept. of Health and Human Services	46,330
Marx, David — USDA/ARS	33,333
Entomology	
Higley, Leon — U.S. Fish and Wildlife Service	24,000
Higley, Leon — Nebraska Game and Parks	28,166
Siegfried, Blair — Agrigenetics	94,073
Stanley, David — U.S.-Korea Cooperative Research	13,090
Miscellaneous grants under $10,000 each	17,200
Food Science and Technology	
Hefle, Susan — University of Arkansas Medical Science	16,622
Schlegel, Vicki — U.S. Army	75,978
Taylor, Steve — USDA/CSREES	39,285
Taylor, Steve — USDA/CSREES	422,783
Miscellaneous grants under $10,000 each	82,900
Northeast Research and Extension Center	
Miscellaneous grants under $10,000 each	2,500
Panhandle Research and Extension Center	
Baltensperger, David — Kansas State University	14,000
Baltensperger, David — Nebr. Dept. of Agriculture	98,000
Burgener, Paul — Nebr. Dept. of Agriculture	24,000
Hein, Gary and **Paul Burgener** — USDA/ARS	10,700
Pavlista, Alex — Nebraska Potato Board	25,000
Pavlista, Alex — Nebr. Dept. of Agriculture	25,000
Miscellaneous grants under $10,000 each	9,100
Plant Pathology	
Dickman, Martin — NSF	110,000
Giesler, Loren — University of Wisconsin	11,812
Powers, Tom — Texas Dept. of Agriculture	42,500
Powers, Tom — Nebr. Dept. of Agriculture	40,500
Steadman, James and George Graef — North Central Soybean Research Program through University of Illinois	12,387
Yuen, Gary — Rutgers-The State University of New Jersey	17,000
Yuen, Gary — USDA/ARS	15,317
Miscellaneous grants under $10,000 each	3,240
School of Natural Resource Sciences	
Hoagland, Kyle and John Holtz — Nebr. Dept. of Environmental Quality	100,000
Skopp, Joseph — City of Lincoln	41,360
Wilhite, Don; Michael Hayes and **Kenneth Hubbard** — U.S. Dept. of Interior/U.S. Geological Survey	75,980
Wilhite, Don — USDA/CSREES	183,331
South Central Research and Extension Center	
Hruskoci, James — Nebr. Dept. of Agriculture	13,000
Miscellaneous grants under $10,000 each	2,000
Veterinary and Biomedical Sciences	
Barletta, Raul — NIH	72,500
Donis, Ruben — NIH through Yale University	116,855
Jones, Clinton — USDA/CSREES	300,000
Kelling, Clayton — Schering-Plough Animal Health Corporation	45,540
Osorio, Fernando — USDA/ARS	97,700
Srikumaran, S. — USDA/CSREES	131,000
Grant Total	**$2,846,175**

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 the faculty members' outstanding efforts in submitting proposals to the various agencies.

Kenneth G. Cassman — USDA/ARS — Enhancing Sorghum, Wheat, and Forage Germplasm Development with Irrigation — $100,000

Raul Barletta — Kamterter, Inc. through USDA/SBIR — Bacterial Endophyte Manipulation and Delivery for Plant Productivity Improvement — $78,540

Janos Zempleni — USDA/NRI - Biotin Affects Cytokine Metabolism — $302,784

M.D. Svoboda and **M.J. Hayes** — USDA/RMA — Risk Assessment and Exposure Analysis on the Agricultural Landscape: An Integrated Approach for Spatio-Temporal Models and Tools for Agricultural Risk Assessment and Exposure Analysis — $358,586

James E. Specht — USDA/ARS — Field Drought Tolerance in Soybean Plant Introductions and Breeding Lines in Nebraska — $294,305

Subramaniam Srikumaran — NIH/NIAD — MHC Class 1 Modulation by PrV: Effect on Xenorecognition — $1,455,000

Amit Mitra — USDA/NRI — Utilization of Direct Repeat-Induced Gene Silencing in Plant Functional Genomics — $233,252

Jose Payero, David Tarkalson and **Richard T. Clark** — U.S. Department of the Interior, Bureau of Reclamation — Sub-Surface Drip Irrigation Demonstration Project — $45,000

Tala Awada — USDA/NRI — Ecosystem Consequences of Tree Establishment on Water Balance in the Nebraska Sandhills — $238,969

Susan Cuppett, Vicki Schlegel and **Rhonda Brand** — Development of a CaCo-2 Cell Model Digestion System — $208,856

Z B Mayo — USDA/ARS — The Role of the Greenbug Holocycle in Generating Biotypic Diversity — $1,500

Timothy P. Carr — USDA/NRI — Mechanisms of Cholesterol Absorption and Regulation by Dietary Phytosterols — $247,331

Ismail Dweikat — USDA/NRI — Isolation, Characterization, and Mapping of Microsatellite DNA Markers in Pearl Millet — $389,958

Andrew Benson — NIH — Novel Cell Wall Biogenesis in *Listeria* and *B.Anthracis* — $1,087,500

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

P. Steven Baenziger, Kulvinder Gill and **Kent Eskridge** — USDA/NRI — The Genetic Basis of Agronomic Traits Controlled by Chromosome 3A in Wheat — $367,933

Sally A. Mackenzie and **Ismail Dweikat** — USDA/NRI — Mitochondrial Genome Dynamics in cms of Pearl Millet — $294,893

Sally Mackenzie, Richard Perrin and **Diana Pilson** — NSF-IGERT — Agricultural Biotechnology and Global Policy — $2,884,200

Subramaniam Srikumaran — NIH/NIAD — MHC Class 1 Modulation by PrV: Effect on Xenorecognition — $1,455,000

David Marx — USDA/ARS — Optimization of Designs for Non-Replicating Germplasm Screening Nurseries — $40,000

James Specht — USDA/ARS — Positioning of Classical Soybean Genes on the Genome Map of Soybean — $13,000

Nancy Lewis — USDA/ARS — Examine the Relationship Between a Healthy Diet and Pesticide Availability and Use — $40,000

Derrel Martin and **William Kranz** — USDA/NRCS — Upgrade Current Irrigation Engineering Tools Used Within NRCS (CPNOZZLE Integration with Center Pivot Evaluation and Design Program CPED) — $25,000

New or Revised Projects

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

NEB-12-291 (Agronomy and Horticulture) Improved Soil Productivity and Environmental Quality on Non-Irrigated Land in Southeastern Nebraska
Investigator: Charles Wortmann
Status: New Hatch project effective July 1, 2002

NEB-12-292 (Agronomy and Horticulture) Characterization of DS Transposition in the Soybean Genome
Investigator: Tom Clemente
Status: New Competitive Grant effective August 1, 2002

NEB-13-155 (Animal Science) Science-Based Air Quality for the Beef Cattle Industry and Rural Communities in Nebraska
Investigator(s): Galen Erickson, Dennis Schulte and Richard Stowell
Status: New State Project effective July 1, 2002

NEB-14-120 (Veterinary and Biomedical Sciences) Mapping of *Mannheimia (Pasteurella) haemolytica* Leukotoxin Binding Site(s) on Bovine CD18
Investigator: S. Srikumaran
Status: New Competitive Grant effective September 1, 2002

NEB-14-122 (Veterinary and Biomedical Sciences) Functional Analysis of bICPO, a Bovine Herpesvirus 1 Gene That is a Promiscuous Trans-Activator
Investigator: Clinton Jones and Y. Zhang
Status: New Project effective September 15, 2002

NEB-14-124 (Veterinary and Biomedical Sciences) Role of PRRSV-Specific Antibodies in Protective Immunity Against Porcine Reproductive and Respiratory Syndrome Virus Infections
Investigator(s): Fernando A. Osorio and O.J. Lopez
Status: New Competitive Grant effective September 15, 2002

NEB-16-096 (Food Science and Technology) Population Genomics of *Listeria monocytogenes*
Investigator: Andy Benson
Status: New Competitive Grant effective September 1, 2002

NEB-17-078 (Entomology) Plant Resistance to Sap-Feeding Insects
Investigator: T. M. Heng-Moss
Status: New Hatch project effective July 1, 2002

NEB-21-081 (Plant Pathology) Characterization and Use of Bacterial Endophytes From Cereals
Investigator: Anne K. Vidaver
Status: New Hatch project effective April 1, 2002

NEB-32-010 (SARE Office) North Central Region (NCR) Sustainable Agriculture Research and Education (SARE) Program
Investigator: David Baltensperger
Status: New Other Grant effective July 1, 2002

NEB-94-029 (Textiles, Clothing and Design) New Technologies for the Utilization of Textile Materials
Investigator: Patricia Cox-Crews
Status: New Hatch project contributing to Multi-State Regional Project S-1002 effective October 1, 2001.

Diane says

The world is divided into people who do things and people who get the credit. Try, if you can, to belong to the first class. There's far less competition.

(from Dwight Morrow)