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ARD

Agricultural Research Division News

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October 1997

Volume 32, Number 2

Comments from the Dean

Dear Colleagues:

A number of administrative changes have occurred and are scheduled to occur on Oct. 1, 1997. During the past few months, Anne Vidaver has been appointed as the Interim Director of the Biotechnology Center and the following faculty have been appointed to two-year terms as department heads/center directors: Robert Klucas (Biochemistry), Anne Parkhurst (Biometry), David Lewis (Horticulture), Blaine Blad (SNRS) and Gary Hergert (West Central R & E Center).

In addition, James Stubbendieck has been appointed as the Director of the Center for Great Plains Studies and Lloyd Bullerman as the Associate Head of the Food Science and Technology Department. These changes are in concert with national trends in academic leadership — the majority of administrators serve for relatively short periods of time. Many unit administrators return to the faculty or move to other administrative positions within four to five years.

On Oct. 1, Vice Chancellor Omtvedt will become the UNL Vice Chancellor for Extended Education on a one-quarter time basis. In this role, Irv will provide leadership and coordination for all distance education programs at UNL. A strong advocate for distance education is needed at UNL if we are to maintain a leadership position in these important educational programs.

Glen Vollmar will become the Acting Associate Vice Chancellor for IANR when Dr. Omtvedt assumes his new role. The permanent Associate Vice Chancellor position has been announced and will be filled on July 1, 1998. The Associate Vice Chancellor will play a key role in managing most of IANR's internal activities which will allow Vice Chancellor Omtvedt to focus on external issues such as relationships with City Campus

and Central Administration, public relations, and interactions with the Legislature.

We believe these changes are in the best interests of IANR and will strengthen our programs and improve administrative efficiency over the long run. We ask that faculty support these changes and work with administrators to make IANR function more effectively.

Thanks for your support and encouragement.

*Darrell W. Nelson
Dean and Director*

Announcing the ARD Undergraduate Honors Student Research Program

ARD is pleased to announce that its proposal to support undergraduate research for University Honors Program students was approved as part of the UNL Reallocation Plan. Reallocation funds will provide approximately \$25,000 this fiscal year with an additional \$28,000 next year, for a permanent funding level of \$53,000 annually.

ARD is committed to providing University Honors Program students with a world-class undergraduate research experience. The *ARD Undergraduate Honors Student Research Program* will match qualified students in their junior or senior year with ARD faculty who will provide a well-directed student research project to address issues in agriculture, biology, human resources and natural resources. The program will provide strong research and learning experiences for students and encourage the most qualified to continue their education in a graduate program.



It is the policy of the University of Nebraska-Lincoln not to discriminate on the basis of gender, age, disability, race, color, religion, marital status, veteran's status, national or ethnic origin or sexual orientation.



Funds are available to support about 10 students this fiscal year. Up to \$2,500 will be transferred to an ARD faculty member's research project to support a student's research. For this start-up year only, proposals will be accepted during the fall semester (Dec. 1), as well as the spring semester (April 1). The program is open to junior and senior University Honors Program students proposing to work with a faculty research mentor who has an ARD appointment.

Preference in the selection process will be given to students who have completed AGRI 299H (*Honors Thesis Seminar*) or HRFS 498H (*Research Methodologies*). Students should enroll in the appropriate undergraduate thesis or an independent study course during the period of mentored research. Upper Division University Honors Program students who have not completed AGRI 299H or HRFS 498H are encouraged to work independently with an ARD faculty member to prepare a proposal for consideration.

Contact ARD for an application packet.

FY 1998 CSREES Budget

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The Conference Committee established to resolve differences in the House and Senate FY 1998 appropriations for USDA has met and provided a compromise budget for CSREES (see table below). The FY 1998 CSREES budget maintains level funding for Base Programs and most Special Research Grants.

We were pleased that the budget provides a small increase for the NRI, establishes a new program in Food Safety, and substantially increases funding for the Pesticide Clearance (IR-4) program. Disappointments included elimination of the Rangeland Research program and reductions in the Water Quality and Global Change programs.

Overall, CSREES funding for mainline programs increased by over \$8 million. Congress eliminated all funding for buildings and facilities in the FY 1998 budget. Given the federal budget environment, the CSREES appropriation is a positive sign that Congress is generally supportive of agricultural research and wishes to maintain a strong federal partnership in funding research programs.

Program	FY97 Budget	FY98 Budget
--- \$ in thousands ---		
Base Programs		
Hatch Act	168,734	168,734
McIntire-Stennis	20,497	20,497
Animal Health	4,775	4,775
Competitive Grants (NRI)		
Plant Systems	36,044	37,000
Animal Systems	23,104	24,000
Nutrition, Food Qual & Health	7,209	8,000
Natural Resources & Environ	17,194	17,500
Processing & New Products	6,755	6,800
Markets, Trade & Rural Devel.	3,897	3,900
Subtotal	94,203	97,200
Special Research Grants		
Food Safety	0	2,000
Pest Control Strategies:		
Critical Issues	200	200
Expert IPM Decision	177	177
Emerging Pest & Disease	1,623	1,623
IPM/Biocontrol	2,731	2,731
Pesticide Clearance	5,711	8,990
Pesticide Impact Assess.	1,327	1,327
Minor Use Animal Drugs	550	550
Nat. Biological Impact Assess.	254	254
Rural Development Centers	423	423
Tropical & Subtropical Ag	2,724	2,724
Water Quality	2,757	2,461
Global Change	1,567	1,000
Subtotal	20,044	24,460
Other Research Grants		
Rangeland Research Grants	475	0
Aquaculture Centers	4,000	4,000
Alternative Crops	650	650
Sustainable Agriculture	8,000	8,000
Critical Ag Materials	500	550
Subtotal	13,625	13,200
Federal Administration	10,249	11,226
Grand Total	359,862	368,027

Research, Extension and Education Title of the 1996 Farm Bill

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The House of Representatives has passed its version of the Research, Extension and Education Title (Title VIII) of the 1996 Farm Bill. The House version of the bill is similar in many respects to the Senate version but does not include the Initiative for Future Agricultural and Food Systems (the new mandatory spending program that provides \$780 million over five years for research to address critical agricultural issues). The House version also does not authorize development of policy research centers or extend the Fund for Rural America through Oct. 1, 2001.

A Conference Committee will be appointed to resolve differences between the House and Senate versions of the Research, Extension and Education Title. We are hopeful that the Senate provisions will prevail during Conference Committee deliberations. Vice Chancellor Omtvedt and Deans Bolen and Nelson have been working with the Nebraska Congressional Delegation to ensure that appropriate provisions are included in the revised Title VIII. This legislation authorizes nearly all of the federal funding for USDA research, extension and higher education programs.

Regional Research Program Changes

Over 50 years ago, Congress established the regional research system by specifying that 25 percent of the USDA Hatch funds coming to the state agricultural experiment stations must be used in support of regional research activities involving at least two experiment stations. Over the years, the Regional Research program has evolved to a highly organized and productive research structure involving all of the agricultural experiment stations and addressing many problems of regional concern throughout the United States and territories. The Agricultural Research Division encourages participation in high priority regional research projects and committees by ARD faculty, and for many years has allocated research support funds and travel funds to support faculty participation.

In recent years, Hatch funding to experiment stations has been nearly level, making it more important to manage the regional funds carefully in order to support the highest priority activities.

Recognizing the need to focus regional research program activities on the highest priorities for the region, the Regional Research Committee (RRC) of the North Central Regional Association (NCRA) of Agricultural Experiment Stations (AES) began activity in 1994 to identify North Central regional research priorities and further define the criteria for approval of projects and committees in the North Central region. The prioritization process was initiated by asking North Central Administrative (NCA) committees, consisting of department heads and chairs, to develop a list of regional research priorities. Through 1994 and 1995, the NCA committees developed disciplinary and interdisciplinary priorities and ranked them in importance for regional program activity.

With the input from this process, the RRC developed a listing of seven cross-cutting research areas of high priority with multiple objectives under each cross-

cut. These priorities were not intended to prioritize research overall for the region, but only to identify those priorities on which to focus regional research funding. A list of those cross-cutting priorities is included below. In addition to the priorities, the RRC and NCA committees developed the following criteria for all regional research projects.

1. **Problem Solving.** North Central RRF will support research that addresses a regional problem within a high priority research area.
2. **High Priority.** The NCRA will identify both specific and general priorities within the cross-cuts as future research areas on which to focus regional funds.
3. **Multi-disciplinary.** The RRF process encouraged the development of broad research programs that are interdisciplinary and address complex problems and are amenable to coordinated research.
4. **Multi-State.** One of the goals of this prioritization program is to build on the specific research strengths of individual states and to blend these strengths into cooperative and complementary research programs that capitalize on regional inputs.
5. **Assure Accountability.** The Government Performance and Results Act (GPRA, 1993) mandates that all federally-sponsored research must include both performance indicators and performance measures.
6. **Direct Impact/Outcome to Society/People.** Every project supported by RRF must show how the proposed research will contribute to society.
7. **Leverage.** Consideration will be given to opportunities to leverage support from other federal and state agencies as well as from private sources to expand regional research programs.
8. **Information and Technology Transfer.** Every project supported by RRF must demonstrate how its results will be delivered to the user (researchers, Cooperative Extension, industry, producers, 4-H and FFA programs, consumers, students, etc.)

The cross-cutting research areas (not prioritized) which were identified are as follows:

- Food Production Processing and Distribution
- Genetic Resources Development and Manipulation
- Integrated Pest Management
- Natural Resources and the Environment
- Economic Development and Policy
- Social Change and Development
- Food and Nutrition

Under each of these cross-cutting research areas there are priority research objectives used to evaluate each regional project and committee proposed for renewal or establishment. These priorities will be reviewed on a regular basis and revised as necessary. Using the review criteria and the priorities is seen as a way to focus regional program activity on the highest needs of the region and to make best use of the limited funds available for this purpose.

Widaman Trust Distinguished Graduate Assistant Award



The Widaman Trust was established in 1975 through a generous gift provided to the University of Nebraska Foundation by Ms. Blanch Widaman. Ms. Widaman asked that the income from the trust be used by UNL for basic research in agriculture and that the funds support people rather than purchase supplies and/or equipment. She suggested that the money be used for scholarships or fellowships for graduate students conducting basic research in agriculture.

The criteria established for the Widaman Trust Distinguished Graduate Assistant Award specifies that only 5 percent of the graduate students in a department can receive the recognition and that the awardees must demonstrate outstanding scholarship and excellence in research. We congratulate the following graduate students for receiving the Widaman Trust Distinguished Graduate Student Award for 1997-1998:

Name: Georgiy G. Burba
Thesis area: Agricultural Meteorology
Department: School of Natural Resource Sciences
Advisor: Shashi B. Verma

Name: Kristi L.H. Ambroz
Thesis area: Plant Breeding and Genetics
Department: Agronomy
Advisors: J. Troy Weeks and Robert Graybosch

Name: Kyung-Moon Kim
Thesis area: Plant Breeding and Genetics
Department: Agronomy
Advisor: P. Stephen Baenziger

Name: Rebecca K. Splan
Thesis area: Breeding and Genetics
Department: Animal Science
Advisor: L. Dale Van Vleck

Name: Saurabh P. Menon
Thesis area: Biochemistry
Department: Biochemistry
Advisor: Steve Ragsdale

Name: Thomas E. Hunt
Thesis area: Entomology
Department: Entomology
Advisors: Leon Higley and John F. Witkowski

Name: Lynne A. Becker
Thesis area: Food Science and Technology
Department: Food Science and Technology
Advisor: Robert Hutkins and Andrew Benson

Name: Yi Wu
Thesis area: Interdepartmental Area of Nutrition
Department: Nutritional Science and Dietetics
Advisor: Marilyn Schnepf

Name: Laxminarayana Devireddy
Thesis area: Medical Sciences Interdepartment Area
Department: Veterinary and Biomedical Sciences
Advisor: Clinton Jones

Hardin Distinguished Graduate Fellowship for 1997-98



The recipient of the Hardin Distinguished Graduate Fellowship for 1996-1997 is **Fikru Haile** from the Entomology Department. The fellowship is made possible by an endowment established at the University of Nebraska Foundation by former University of Nebraska Chancellor Clifford Hardin to support outstanding graduate students doing research in plant physiology.

Fikru Haile is completing his Ph.D. research on the physiology of plant tolerance to insect injury. His research focuses on plant physiology associated with insects as stressors. This research is extremely important in understanding plant-insect interactions and mechanisms that contribute to plant resistance to biotic stress. His thesis and non-thesis research activities will produce at least five refereed journals. Dr. Leon Higley is his advisor.

Innovative and High Risk Research Program

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Three proposals were submitted for the Innovative and High Risk Research Program during the past six months. This program is designed to provide seed money for very innovative research projects. The objective is to obtain preliminary data that can be used to support requests for grants from federal agencies or companies. Funding will not be provided for projects that are a continuation of a faculty member's current research program. The proposals may 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 and High Risk Research Program effective July 1, 1997:

Sharron Quisenberry \$15,000
Entomology Department
"Molecular Interactions in Aphid/Wheat Systems"

Ruben Donis \$15,000
Veterinary and Biomedical Sciences
"Antigen Delivery by Bovine Viral Diarrhea Virus Replicon RNA Packaged into Virons"

Steve Ragsdale \$15,000
Biochemistry Department
"Redox Control of Biological Activity"

New or Revised Projects

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

NEB-12-264 (Agronomy) Herbage and Livestock Production from Legume/Grass Pastures
Investigator: Bruce Anderson
Status: New Hatch project effective June 11, 1997

NEB-12-265 (Agronomy) Molecular Characterization and Manipulation of The Wheat Genome for Crop Improvement
Investigator: Kulvinder S. Gill
Status: New Hatch project effective June 16, 1997

NEB-14-095 (Veterinary and Biomedical Sciences) Interaction of Porcine Reproductive and Respiratory Syndromevirus and *Salmonella choleraesuis*
Investigator: Robert W. Wills
Status: New Animal Health project effective Aug. 15, 1997

NEB-14-096 (Veterinary and Biomedical Sciences) Functional Analysis of the BHV-1 Latency Related Gene
Investigator: Clinton Jones
Status: New Animal Health project effective July 1, 1997

NEB-15-084 (Biochemistry) Redox Control of Biological Activity
Investigator: Stephen W. Ragsdale
Status: New State project effective July 1, 1997

NEB-17-070 (Entomology) Bio-Intensive Pest Management of the Greenbug
Investigator: Z B Mayo
Status: New Hatch project effective July 1, 1997

NEB-17-071 (Entomology) Development of Resistance Management Techniques for Corn Insect Pests in Nebraska
Investigator: Blair D. Siegfried
Status: New Hatch project effective July 7, 1997

NEB-26-027 (School of Natural Resource Sciences) Integrating Biological Diversity into Managed Land-Use Systems
Investigator: Ron J. Johnson
Status: New Hatch project effective July 7, 1997

NEB-31-002 (Center for Sustainable Agricultural Systems) Sustainable Agricultural Systems
Investigator: Charles A. Francis
Status: Revised project effective Aug. 1, 1997

NEB-43-060 (West Central Research and Extension Center) Integrated Management of Arthropod Pests of Livestock and Poultry
Investigator: John B. Campbell
Status: New Hatch project that contributes to regional research project S-274 effective Oct. 1, 1996

NEB-44-035 (Panhandle Research and Extension Center) Feed Resources and Beef Production Systems in Western Nebraska to Optimize Total Efficiency
Investigator(s): Ivan G. Rush and Burt Weichenthal
Status: Revised Hatch project effective May 1, 1997

NEB-91-048 (Nutritional Science and Dietetics) The Use of Edible Films and Natural Antioxidants to Control Warmed-Over Flavor in Meats
Investigator: Marilyn Schnepf
Status: New Hatch project effective Sept. 1, 1997



Grants and Contracts Received August and September 1997

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Agricultural Research and Development Center	
Miscellaneous grants under \$10,000 each	\$ 9,000
Agronomy	
Andrews, D. J. — Intormil	74,400
Maranville, J. W. — Intormil	40,669
Mason, S. C. — Intormil	40,810
Staswick, P. — University of Illinois	34,913
Miscellaneous grants under \$10,000 each	65,985
Animal Science	
Mandigo, R. W. — National Cattleman's Beef Association	25,450
Milton, T. — Fort Dodge Animal Health	25,920
Scheideler, S. — Waldbaum Company	42,360
Miscellaneous grants under \$10,000 each	73,979
Biochemistry	
Banerjee, R. — National Institute of Health	208,910
Ragsdale, S. — Consortium for Plant Biotechnology Research	47,303
Weeks, D. — National Science Foundation	85,000
Miscellaneous grants under \$10,000 each	21,295
Biological Systems Engineering	
Bashford, L. — Caterpillar, Inc.	68,000
Brand, R. — Whitaker Foundation	45,139
Eisenhauer, D. and Franti, T. — USDA Forest Service	50,000
Center for Grassland Studies	
Miscellaneous grants under \$10,000 each	17,000
Center for Sustainable Ag	
Francis, C. A. — University of Minnesota	11,900
Director's Office	
Waller, S. — USDA/SARE	1,795,300
Entomology	
Foster, J. — USDA/ARS	33,000
Siegfried, B. — Pioneer Hi-Bred	10,200
Stanley, D. W. — USDA/ARS	24,000
Miscellaneous grants under \$10,000 each	145,055
Food Science and Technology	
Miscellaneous grants under \$10,000 each	5,000
Horticulture	
Miscellaneous grants under \$10,000 each	16,800
Northeast Research and Extension Center	
Miscellaneous grants under \$10,000 each	103,944
Panhandle Research and Extension Center	
Miscellaneous grants under \$10,000 each	78,575
Plant Pathology	
Dickman, M. B. — USDA/BARD	150,000
Miscellaneous grants under \$10,000 each	20,513
School of Natural Resource Sciences	
Walter-Shea, E. A. — NASA-Goddard	29,300
Hoagland, K. — Nebraska Department of Environmental Quality	101,374
Hoagland, K. — U.S. Army Corp Engineers	24,924
Peters, E. — U.S. Fish and Wildlife	37,750
Savidge, J. — U.S. Fish and Wildlife	52,250
Miscellaneous grants under \$10,000 each	17,775

South Central Research and Extension Center	
Ferguson, R. — Kansas State University	93,919
Miscellaneous grants under \$10,000 each	34,850
Veterinary and Biomedical Sciences	
Osorio, F. A. — USDA/FAS/ICD/RSED	10,000
Wills, R. — National Pork Producers	18,000
Miscellaneous grants under \$10,000 each	770
Water Center	
Spalding, R. F. — Lewis and Clark NRD	77,150
Volk, B. — USDA/ARS	300,000
Watts, D. — USDA/CSREES	200,000
West Central Research and Extension Center	
Hergert, G. — Burlington Northern Endowment via UN Foundation	18,000
Miscellaneous grants under \$10,000 each	14,931
Grand Total	\$4,401,413

UNL Rankings for Research and Development Expenditures

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NSF recently released the FY 1995 national rankings of universities for science and engineering research and development expenditures. During FY 1995, UNL R & D expenditures from federal sources and all sources were \$36,897,000 and \$107,721,000, respectively. For FY 1996, these expenditures were \$32,352,000 and \$102,460,000, respectively. More information on national rankings is included on the NSF Web site.

The FY 1995 national rankings for UNL are given below:

Comparison Groups	Federal R & D Funds	All R & D Funds
All universities	102nd	70th
Public universities	66th	48th

ARD faculty contributed significantly to UNL's increase in rankings. In FY 1995, ARD faculty expended \$14.5 million of federal funds and \$51.1 million in funds from all sources. We are pleased with the competitiveness of our faculty in obtaining grants and contracts from federal R & D programs as well as from other funding entities.

Diane says

A great purpose leads to great achievement.