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Agricultural Experiment Station News June 1991

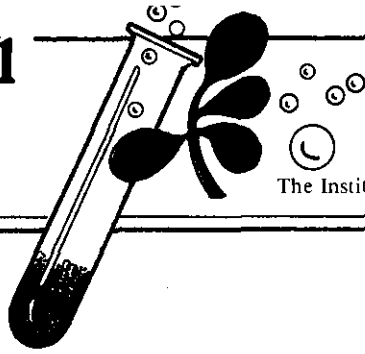
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EMPHASIS ON EXCELLENCE

Colleagues:

American business is currently focusing on "total quality management" to sustain sales of goods and services and to improve profits through increased competitiveness. Total quality management is designed to ensure that the "customer" is always satisfied with the product or service, incremental improvements are constantly being made in the quality of the product or service, and all employees of the business are dedicated to excellence in the workplace.

Aspects of total quality management apply to land-grant universities. Our "customers" are students, farmers and ranchers, agribusinesses, federal and state agencies, agricultural organizations, other scientists and citizens. Faculty with scholarly service appointments may also have faculty and staff members as "customers". Our products are new knowledge developed through research and educational programs delivered in the classroom and through Cooperative Extension. A wide range of services are also provided to external and internal "customers" by our faculty and staff.

The basic premises of total quality management are: an understanding of the needs of the "customer", delivery of quality goods/services, and follow-up to determine if the customer is satisfied. Customer dissatisfaction results in immediate efforts to upgrade the goods or services provided, but continual efforts to improve quality occurs regardless of the current level of customer satisfaction.

Faculty members in land-grant universities have a great deal of freedom to determine the direction of their research programs. Legislation only requires that research efforts be directed at solving real problems of producers and citizens. Research programs may address immediate problems or provide information to solve future problems. There is a moral obligation, however, of all faculty members to attack significant problems of our "customers", to conduct high quality research, and to strive for excellence in all aspects of our assignment. In addition, we must seek feedback from

our "customers" on how well our research program is meeting their needs.

Do you understand the needs of your "customers"? Are you conducting research that addresses these needs? Are you following up with "customers" to determine if the new knowledge resulting from your research is being used? Are there problems in implementing this new research information? Is additional research warranted on this problem to resolve implementation difficulties?

During the current fiscal year taxpayers are providing ARD with \$133,121 per research FTE through state appropriations and federal formula funds. In addition, faculty members obtain about \$51,600 per research FTE through grants and contracts. Our challenge is to ensure that these funds are well spent in addressing important issues and that information resulting from the research is made available to users as quickly as possible. Effective organizations that serve customer needs are greatly valued and will be supported. We must ensure that agricultural, natural resources, and home economics research is valued by citizens if ARD funding levels are to be enhanced. I challenge you to review your research program in light of the concepts of total quality management and make changes if needed. Administrators will support you in changing the direction and enhancing the quality of your research program if a critical self analysis indicates that change would be beneficial.

Darrell W. Nelson

Darrell W. Nelson
Dean and Director



UPDATE ON RESEARCH PROJECTS

Federal funds (Hatch, Animal Health, Regional Research, and McIntire-Stennis) can only be expended on CSRS-approved projects. About 18 percent of ARD appropriated funds come from federal sources. The research project system provides a structured method for faculty members to periodically assess their research programs, evaluate priority research needs, and establish new directions. Two years ago the Agricultural Research Division was experiencing significant difficulty in managing the research project system. Many projects had expired without revision or development of new research project outlines and without submission of termination reports (Form AD 421). As a consequence, unit administrators and accounting personnel had a difficult time formally assigning all unit FTEs and operating funds to active projects as is required annually by CSRS. ARD has been placing high priority on ensuring that all faculty with research appointments have an active research project. I am pleased to report that significant progress has been made in the development of research project outlines by faculty and in holding peer reviews of the research projects. Relatively few ARD-appointed faculty do not have active projects at this time.

Some view the requirement that every ARD research faculty member have a research project as counter to team efforts. This is not the case as the development of team research project outlines is highly encouraged and a significant number these projects currently exist. ARD would like to see faculty members develop individual projects that complement, not duplicate, research efforts on team projects. Rarely would a team project encompass all aspects of a faculty member's research interests.

The Agricultural Research Division has recently released two revised versions of documents entitled "Research Project Development and Review Process" and "Format for Research Project Outlines". These documents provide both philosophical and practical information regarding the development of a research project outline. The information provided is more detailed and clear than that in the previous documents. The ARD Advisory Council provided valuable assistance in revision of the documents. Copies of the documents are available from your unit administrator or Diane Mohrhoff in the ARD office.

NATURAL GAS MAIN INSTALLATION AT ARDC/MEAD

The Agricultural Research and Development Center has operated and maintained the natural gas distribution system inherited from the Nebraska Ordnance Plant. The natural gas has been purchased from the Peoples Natural Gas Company at a wholesale rate from that company's feeder main located west of the Center.

The ARDC lines were installed in the late 1940s and carry natural gas at high pressure. These cast iron distribution lines have corroded in places resulting in several leaks, causing loss of valuable gas and service interruption.

The existing system will be replaced before the upcoming heating season. The Peoples Company has agreed to install and operate the new system.

We are grateful for the LB309 Deferred Maintenance Allocation of Funds which is partial payment on this sorely needed improvement.

ARD ACTION PLANS

The Agricultural Research Division does not have a formal action plan detailing the direction that our research programs will take in the next several years. The rapidly changing nature of research problems, interests of individual faculty members, sources of grant funding, and decentralized research administration do not favor development of rigid plans.

Decisions on resource allocation, particularly assignment of faculty positions to units, are based largely on priority areas identified in the IANR Strategic and Action Plans. These priority areas are:

- Water and the Environment
- Biotechnology and Other Basic Research
- Agriculture and Agribusiness Profitability (including sustainable systems)
- Nutrition, Diet and Health
- Rural Revitalization
- Value Added Processing of Agricultural Commodities

During the past eighteen months, a number of priority programs have been initiated or enhanced through a combination of resource redirection and addition of a limited amount of new resources. Programs in aquaculture, limnology, poultry pathology, rural sociology, rural waste management, and potato production have been initiated through employment of new faculty. Programs in plant and animal biotechnology, sustainable agriculture/cropping systems, agricultural climatology, human nutrition, industrial agricultural products, rural revitalization, and international trade have been strengthened through additional faculty and/or other resources. Even with significant redirection, a strong core research program has been maintained in disciplinary departments and research and extension centers.

The current University of Nebraska funding situation will result in fewer faculty members with research appointments. We anticipate that reallocation following the budget reduction process ensure that strong research programs will be maintained in those areas that are critical for Nebraska. ARD is pleased to receive input from anyone concerning research priorities and research needs of Nebraska.

AGRICULTURAL RESEARCH DIVISION CURRENT GRANTS & AWARDS

The Agricultural Research Division administers several grant and award 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.

ARD Administered Grants and Awards Summary

NU Foundation Endowments

Anna H. Elliott Fund Grants

Awarded every two years as endowment income permits. Income is about \$70,000 annually and program is oriented to plant science research directed to Western Nebraska. RFP issued about January 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 January 15.

Widaman Trust Graduate Fellowships

Awarded annually. \$1,200 added to stipend of outstanding graduate students. Nominations are made 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 grant awarded annually. Nominations are made about May 1.

ARD/International Programs Indirect Cost Funds

ARD Foreign Travel Awards

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

ARD Discretionary Funds

Interdisciplinary Research Team Grants

Awarded annually or biannually, depending on flexibility of funds. One or two grants awarded for up to two years duration and for up to \$15,000 annually. RFP issued about April 1.

Graduate Student Recruitment Funds

Awarded as requested by departments. Up to 2 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.

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 September 1.

ARD Royalty Income

Calf Scours Vaccine Royalty Funds Grants

Awarded annually or biannually, depending on income. Approximately \$60,000 awarded annually for animal health related research by competitive RFP or to discretionary research laboratory improvement needs.

Other Programs Coordinated by ARD

Layman Awards (NU Foundation Funds) - awarded annually for research support. Size of awards vary from \$1,000 to \$15,000. RFP issued about October 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 Commodity Check-off Board Grants - Annual research grants usually in the \$5,000 to \$20,000 range. RFP issued about October 1.

The Agricultural Research Division also helps process research grant proposals directed at 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.

NEW OR REVISED PROJECTS

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

11-086 (Biological Systems Engineering) Development of Engineering Tools to Enhance Grain Industry Profitability

Investigator: D. Jones

Status: New Hatch project effective April 1, 1991

11-086 (Biological Systems Engineering) Fertigation Techniques for Furrow-Irrigated Crops Using Surge Irrigation

Investigator: D. G. Watts

Status: New Hatch project effective April 19, 1991

14-061 (Veterinary Science) Enhancement of Immunity to Bovine Respiratory Syncytial Virus Infections

Investigator(s): C. L. Kelling, L. J. Perino, R. D. Oberst

Status: New Competitive Grant effective June 1, 1991

14-062 (Veterinary Science) Integrated Management Practices for Control of Swine Dysentery and Salmonellosis

Investigator(s): G. E. Duhamel, P. J. Fedorka-Cray, G. R. Bodman

Status: New Special Grant effective June 1, 1991

15-057 (Biochemistry) Chloroplast Heteroplasmic Suppression

Investigator: R. J. Spreitzer

Status: New Competitive Grant effective June 1, 1991

16-057 (Food Science & Technology) The Design of an Enzyme Reactor for the Conversion of Hemicellulose to Monosaccharides

Investigator: M. M. Meagher

Status: New Hatch project effective April 1, 1991

16-058 (Food Science & Technology) Occurrence, Control and Prevention of Pathogenic Bacteria in Foods

Investigator: S. S. Sumner

Status: New Hatch project effective April 1, 1991

26-016 (Forestry, Fisheries & Wildlife) Integrated Pest Management - Vertebrates in Nebraska

Investigator: S. E. Hygnstrom

Status: New State project effective April 1, 1991

44-042 (Panhandle Research & Extension Center) Agricultural Enhancement of Potato Production and Utilization

Investigator: A. Pavlista

Status: New Hatch project effective March 7, 1991

44-043 (Panhandle Research & Extension Center)

Development of Integrated Pest Management. Systems for Major Insect Pests of Crops in the Nebr Panhandle

Investigator: G. L. Hein

Status: New Hatch project effective March 14, 1991

44-044 (Panhandle Research & Extension Center)

Sugarbeet Planters — Plant Spacing and Emergence Performance

Investigator(s): J. A. Smith, C. D. Yonts, S. D. Kachman

Status: New Hatch project effective April 1, 1991

91-035 (Nutritional Science and Hospitality Management) Nutrition Status and Family History of Chronic Disease in Young Nebraska Women

Investigator: N. M. Lewis

Status: New Hatch project effective May 1, 1991

91-036 (Nutritional Science and Hospitality Management) Consumption and Nutrient Content and Retention of Vegetables and Their Health Implications

Investigator: J. A. Albrecht

Status: New Hatch project effective May 1, 1991

GRANT AND CONTRACT INCOME DURING THE LAST THREE CALENDAR YEAR EXPRESSED ON DOLLARS PER RESEARCH FTE BASIS

UNIT	1988	1989	1990	Average 1988-90
—\$/RESEARCH FTE/YEAR—				
Agricultural Economics	3,800	1,451	8,889	4,713
Agricultural Meteorology	197,900	94,938	201,807	164,398
Agronomy	38,500	25,179	43,230	35,636
Animal Science	52,800	46,626	61,670	53,699
Biochemistry	59,600	68,042	57,967	61,870
Biol/Systems Engineering	15,600	12,982	16,512	15,031
Entomology	26,900	38,906	29,415	35,074
Food Science & Technology	93,100	58,433	67,233	72,927
Forestry, Fish/Wildlife	69,600	7,639	67,804	48,348
Horticulture	90,000	74,147	47,437	70,528
Northeast Res & Ext Ctr	40,000	32,671	27,737	33,469
Nutr Science & Hosp Mgmt	14,900	57,072	19,630	30,534
Panhandle Res & Ext Ctr	26,000	37,769	40,588	34,786
Plant Pathology	43,700	59,686	79,714	61,033
South Cent Res & Ext Ctr	60,600	28,246	30,101	39,649
Textiles Cloth & Design	13,000	13,001	698	8,900
Veterinary Science	68,700	42,056	97,114	69,290
West Cent Res & Ext Ctr	34,700	46,205	31,650	37,518
AVERAGE	50,700	41,395	51,622	48,772



**GRANTS AND CONTRACTS
RECEIVED
APRIL & MAY, 1991**

Agricultural Meteorology			Food Processing Center	
Blad, B. - NASA	95,965		McAuliffe, T. - UN Foundation	10,500
Blad, B., Wilhite, D., Horst, G., Riordan, T., Steinegger, D. - Lincoln Water System	19,564		Miscellaneous Grants Under \$5,000 each	13,206
Verma, S. - NASA	73,000			
Agronomy			Food Science & Technology	
Andrews, D. - A.I.D.	26,600		Meagher, M. - UN Foundation	20,000
Eastin, J. - A.I.D.	10,925		Miscellaneous Grants Under \$5,000 each	7,772
Jones, A. - UN Foundation	10,000			
Sander, D., Waters, D. - UN Foundation	10,000		Horticulture	
Shea, P. - U.S. Golf Association	164,561		Horst, G. - U.S. Golf Association	235,426
Shearman, R. - UN Foundation	25,000		Miscellaneous Grants Under \$5,000 each	15,391
Sullivan, C. - A.I.D.	6,157			
Miscellaneous Grants Under \$5,000 each	60,462		Industrial Ag Products Center	
			Hanna, M. - USDA/CSRS	104,280
Animal Science				
Calkins, C. - Nebraska Beef Board	22,000		Northeast Research & Extension Center	
Grant, R. - UN Foundation	8,500		Miscellaneous Grants Under \$5,000 each	16,850
Klopfenstein, T. - Fats & Proteins	30,000			
Stock, R. - Fats & Proteins	29,400		Panhandle Research & Extension Center	
Miscellaneous Grants Under \$5,000 each	23,871		Miscellaneous Grants Under \$5,000 each	109,324
Biochemistry			Plant Pathology	
Spreitzer, R. - USDA	90,000		Miscellaneous Grants Under \$5,000 each	500
Biological Systems Engineering			South Central Research & Extension Center	
Eisenhauer, D., Ferguson, R., Roeth, F., Spalding, R. - USDA	111,352		Miscellaneous Grants Under \$5,000 each	15,450
Miscellaneous Grants Under \$5,000 each	5,185			
			Veterinary Science	
Entomology			Miscellaneous Grants Under \$5,000 each	20,300
Miscellaneous Grants Under \$5,000 each	3,000			
			West Central Research & Extension Center	
Environmental Programs			Campbell, J. - NCRPIAP	7,500
Miscellaneous Grants Under \$5,000 each	5,000		Dearborn, D. - USDA/CSRS	93,852
			Hergert, G. - TVA	15,000
			Miscellaneous Grants Under \$5,000 each	9,600
			Grand Total	1,525,493