Agricultural Experiment Station News June 1991
EMPHASIS ON EXCELLENCE

Colleagues:

American business in 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
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 of 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
- Agriculture and Agribusiness Profitability
- 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.
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 Pathogenic Bacteria in Foods
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 April 1, 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

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GRANTS AND CONTRACTS RECEIVED APRIL & MAY, 1991

Agricultural Meteorology
Blad, B. - NASA 95,965
Blad, B., Wilhite, D., Horst, G., Riordan, T., Steinegger, D. - Lincoln Water System 19,564
Verma, S. - NASA 73,000

Food Processing Center
McAuliffe, T. - UN Foundation 10,500
Miscellaneous Grants Under $5,000 each 13,206

Food Science & Technology
Meagher, M. - UN Foundation 20,000
Miscellaneous Grants Under $5,000 each 7,772

Horticulture
Horst, G. - U.S. Golf Association 235,426
Miscellaneous Grants Under $5,000 each 15,391

Industrial Ag Products Center
Hanna, M. - USDA/CSRS 104,280

Northeast Research & Extension Center
Miscellaneous Grants Under $5,000 each 16,850

Panhandle Research & Extension Center
Miscellaneous Grants Under $5,000 each 109,324

Agronomy
Andrews, D. - A.I.D. 26,600
Eastin, J. - A.I.D. 10,925
Jones, A. - UN Foundation 10,000
Sander, D., Waters, D. - UN Foundation 10,000
Shea, P. - U.S. Golf Association 164,561
Shearman, R. - UN Foundation 25,000
Sullivan, C. - A.I.D. 6,157
Miscellaneous Grants Under $5,000 each 60,462

Plant Pathology
Miscellaneous Grants Under $5,000 each 500

Animal Science
Calkins, C. - Nebraska Beef Board 22,000
Grant, R. - UN Foundation 8,500
Klopfenstein, T. - Fats & Proteins 30,000
Stock, R. - Fats & Proteins 29,400
Miscellaneous Grants Under $5,000 each 23,871

South Central Research & Extension Center
Miscellaneous Grants Under $5,000 each 15,450

Entomology
Miscellaneous Grants Under $5,000 each 3,000

Veterinary Science
Miscellaneous Grants Under $5,000 each 20,300

Biochemistry
Spreitzer, R. - USDA 90,000

West Central Research & Extension Center
Campbell, J. - NCRPIAP 7,500
Dearborn, D. - USDA/CSRS 93,852
Hergert, G. - TVA 15,000
Miscellaneous Grants Under $5,000 each 9,600

Grand Total 1,525,493

Environmental Programs
Miscellaneous Grants Under $5,000 each 5,000