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Agricultural Research Division News

The Institute of Agriculture and Natural Resources

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University of Nebraska-Lincoln

February 1991

Volume 25, Number 1

CALL FOR PREPROPOSALS: SARE/USEPA PROGRAM

In recognition of a shared commitment to lessening pollution caused by the use of agricultural chemicals, the USDA/CSRS [Sustainable Agriculture Research and Education (SARE) program, formerly LISA] and the Pollution Prevention Office of the EPA have initiated a joint program designed to supplement and extend the work already being supported by both programs through new education, training and research projects. This joint program will:

1. create an opportunity for EPA and USDA to work cooperatively in representing the environmental perspective in agricultural policy in general and in promoting the use of sustainable agriculture in particular;
2. assure the adoption of sustainable practices and reduce the use of highly toxic pesticides; and
3. recognize and capitalize on the critical role of state, regional, private and public organizations in promoting and implementing sustainable agriculture pollution prevention initiatives.

There is $415,000 available to fund regional projects in the North Central Region. This program will be managed by the North Central Region SARE Administrative Council. **Preproposal deadline is February 22, 1991.**

STATUS OF LISA/SARE PREPROPOSALS

The North Central Region Administrative Council received 146 preproposals for the 1991 program. The total funds requested were $12,257,916. This year the Council evaluated the preproposals based on suitability of objectives to NCR LISA priority issues, potential significance, feasibility of achieving stated objectives, and general components of technical design. The Council selected 34 preproposals for development into full proposals representing $3,379,305 in LISA funding requests. All 12 states in the North Central Region have projects being considered for further development. Six proposals from Nebraska were selected for development into full proposals.

Twenty-one projects were funded in 1988, 18 in 1989. Nine projects were funded in 1990, of those, 4 were continuations of previously funded projects. $1,080,960 is available for funding North Central Region LISA projects.

INDIRECT COST RECOVERY AT UNIVERSITIES

Indirect costs are legitimate expenses associated with the conduct of research. These expenses include utilities, renovation of facilities, repair and replacement of equipment, increased administrative activity (personnel, purchasing, and accounting), and building and grounds maintenance. The indirect cost rate is negotiated between the institution and a designated federal agency. All components of the indirect cost rate must be justified to federal auditors. Indirect cost rates vary significantly between universities.

If "full" indirect cost were assessed the rate would be much higher than the negotiated rate. For example, the "full" rate at Princeton and SUNY-Buffalo are 90 and 90.3%, respectively, whereas they charge 52 and 67%, respectively. The negotiated rate at private universities is normally much higher than public universities. For example, the rates at Harvard, Stanford, and MIT are 76.2, 73, and 63%, respectively.

Universities seldom recover the negotiated indirect cost rate on all research grants. For example, MIT recovers 52% and their indirect cost rate is 63%. The University of Michigan indirect cost rate is 59% and they recover 40%. SUNY-Buffalo recovers only 20% indirect costs although their negotiated rate is 52%. Failure to fully recover indirect costs results from waiver of indirect costs on some grants and prohibition or limitation of indirect costs in some competitive grant programs.

The indirect cost rate at UNL is 37.5 and 38% for non-ARD and ARD grants and contracts, respectively. Indirect cost recovery in ARD is only 7% whereas all UNL, Arts and Sciences, and Engineering recover 13, 26, and 28%, respectively. The low indirect cost recovery within ARD results in limited distributions of "overhead" funds to units and limits IANR's flexibility to address special needs for equipment and facility renovation.

The Agricultural Research Division provides information and educational programs to all people without regard to race, color, national origin, sex or handicap.

PROJECT REVIEW
BY THE INSTITUTIONAL REVIEW BOARD

WHY MUST A RESEARCH PROJECT BE SUBMITTED TO INSTITUTIONAL REVIEW BOARD FOR REVIEW:

Every federally funded research institution must issue an Assurance of Compliance with PL 93-348, 45 CFR 46 and 21 CFR 50-56: "Investigators should not have sole responsibility for determining whether research involving human subjects fulfills ethical standards. Others who are independent of the research must share this responsibility."

WHO MUST SUBMIT:

At the University of Nebraska, the decision to apply the regulations across the board means that any researcher who includes human subjects in the investigation, needs to submit the protocol to the Institutional Review Board for the Protection of Human Research Subjects (commonly referred to as IRB). Examples of research with human subjects, include, but are not limited to: focus groups, participants who complete interviews or questionnaires, subjects completing standardized tests, taste panels, etc. "Researchers" includes principle investigators, whether faculty or graduate students. The major professor for a graduate student has the responsibility of insuring that the graduate student doing research with human subjects has submitted the protocol for IRB approval. The major professor should be listed as investigator.

WHAT IS REVIEWED:

The type of review depends on the classification (**Full Board, Expedited, Exempt**) of the proposal. Detailed information about each classification is in the **IRB Guidelines for the Protection of Human Subjects in Research Studies** manual. Turn-around on protocol reviews is planned to facilitate the researcher's project implementation; "Full Board Review" projects that arrive in the IRB Office by the first of the month are considered at the IRB meeting the third Thursday of the month. Turn-around on "Expedited" and "Exempt" may be shorter, if the researcher(s) has submitted appropriate information and documentation.

WHAT DOES IRB CONSIDER:

The basic principles underlying Institutional Review Board (IRB) review of research protocols, in keeping with the federal regulations that govern human research subjects include: (1) the risks to subjects are minimized; (2) the risks to subjects are reasonable in relation to anticipated benefits; (3) the selection of subjects is equitable; and (4) informed consent is adequate. Essentially, the IRB strives to ensure that all protocols are in accord with these principles.

Scientific integrity and responsible conduct of research are scrutinized in each protocol. The protocol must contain evidences that ethical precepts relative to human subject involvement are maintained. The experimental design of the study should be sound and should insure that the principal investigator has the appropriate qualifications, experience and facilities to conduct the research.

The major types of risks are: 1) physical risk (pain, soreness); 2) psychological risk (sensitive content of research; 3) social risk (invasion of privacy); 4) legal risk (criminal prosecution); and 5) economic risk (loss of monetary gain). Any risks associated with the research project are minimized to the greatest extent possible, the potential benefits are maximized to the greatest extent possible, and the risks to the subjects are outweighed or balanced by the potential benefits.

WHERE CAN I GET MORE INFORMATION:

CONTACT:

Institutional Review Board
3018 Eppley Science Hall
University of Nebraska Medical Center
600 South 42nd Street
Omaha, NE 68198-6810

or (IANR rep on IRB)
Joan Laughlin, 2-2913

GRANTS AND CONTRACTS RECEIVED DECEMBER, 1990 AND JANUARY 1991

Agronomy	
Graybosch, Robert - Sogetal Corporation	15,000
Miscellaneous Grants Under $5,000 each	28,150
Animal Science	
Miscellaneous Grants Under $5,000 each	28,330
Biological Systems Engineering	
Miscellaneous Grants Under $5,000 each	2,250
Entomology	
Wright, R. & Meinke, L. - Pioneer Hi-Bred Int'l	10,000
Miscellaneous Grants Under $5,000 each	4,550
Environmental Programs	
Miscellaneous Grants Under $5,000 each	10,000
Food Processing Center	
Miscellaneous Grants Under $5,000 each	201,686
Food Processing & Technology	
Miscellaneous Grants Under $5,000 each	6,372
Forestry, Fisheries & Wildlife	
Hoagland, K. - U.S. Office of Naval Research	87,566
Horticulture	
Miscellaneous Grants Under $5,000 each	24,676
Northeast Research & Extension Center	
Brumm, M. C. - NutriQuest	12,000
Miscellaneous Grants Under $5,000 each	2,990
Panhandle Research & Extension Center	
Miscellaneous Grants Under $5,000 each	2,009
Plant Pathology	
Miscellaneous Grants Under $5,000 each	87
South Central Research & Extension Center	
Miscellaneous Grants Under $5,000 each	10,170
Veterinary Science	
Miscellaneous Grants Under $5,000 each	20,409
West Central Research & Extension Center	
Miscellaneous Grants Under $5,000 each	13,950
Total	480,195

NEW OR REVISED PROJECTS

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

12-002 (Agronomy) Improvement and Evaluation of Oats and Barley
Investigator: P. S. Baenziger
Status: Revised Hatch project effective October 10, 1989

13-097 (Animal Science) The Genetics of Body Composition in Beef Cattle
Investigator(s): M. K. Nielsen & R. J. Rasby
Status: New Hatch project contributing to NC-196 effective October 1, 1989

13-098 (Animal Science) Role of Gonadotropin Heterogeneity in Reproductive Function
Investigator(s): H. E. Grotjan, J. E. Kinder and R. A. Britton
Status: New Hatch project effective April 1, 1990

15-054 (Biochemistry) Isotope Fractionation in Biological Systems
Investigator: M. H. O'Leary
Status: New Hatch project effective November 1, 1989

16-051 (Food Science & Technology) Starch Technology: Production, Characterization, and Utilization
Investigator: D. S. Jackson
Status: New Hatch project effective November 1, 1989

17-049 (Entomology) Molecular Taxonomy of Black Flies
Investigator(s): K. P. Pruess and T. O. Powers
Status: New Hatch project effective February 12, 1990

26-012 (Forestry, Fisheries & Wildlife) Biology, Ecology, and Control of Dioryctria Borers of Pines
Investigator: M. O. Harrell
Status: New McIntire Stennis project effective October 1, 1989

46-012 (Roman L. Hruska U.S. Meat Animal Research Center) The Genetics of Body Composition in Beef Cattle
Investigator(s): R. M. Koch & L. V. Cundiff
Status: New Hatch project contributing to NC-196 effective October 1, 1989

92-016 (Consumer Science and Education) Rural Households at Risk of Serious Housing Problems in the North Central Region
Investigator: E. R. Combs
Status: New Hatch project contributing to NC-199 effective October 1, 1989

11-084 (Biological Systems Engineering) Systems Approach to Improved Energy and Water Use in Greenhouses
Investigator(s): D. D. Schulte, G. E. Meyer & J. B. Fitzgerald
Status: New Hatch project effective December 13, 1990

12-188 (Agronomy) Development of an Intermittent Sprayer System for Reducing Chemical Input in Nebr Cropping Systems
Investigator(s): D. A. Mortensen, K. VonBargen, G. E. Meyer & G. A. Wicks
Status: New State project effective July 1, 1990

12-190 (Agronomy) Leafy Spurge: Analysis of Genetic Variation by cpDNA Characterization
Investigator: S. J. Nissen
Status: New Hatch project effective September 11, 1990

12-194 (Agronomy) Novel Methods for Soybean Genetic Improvement and Genomic Analysis
Investigator: J. E. Specht
Status: New Hatch project effective December 12, 1990

12-195 (Agronomy) Biometrical Genetics, Selection Theory and Methods, and Germplasm Improvement in Maize
Investigator: B. Johnson
Status: New Hatch project effective December 13, 1990

13-101 (Animal Science) Genetic Variation for Reproduction and Energy Utilization in Mice
Investigator: M. K. Nielsen
Status: New Hatch project effective October 9, 1990

14-056 (Veterinary Science) Interaction of Viruses with the Bovine Immune System: Cellular Basis of BVDV Lymphotropism
Investigator: F. A. Osorio
Status: New Special Grant effective August 1, 1990

14-057 (Veterinary Science) Molecular Bases of BVD Virus Cytopathology and Disease
Investigator: R. Donis
Status: New Special Grant effective August 1, 1990

14-058 (Veterinary Science) Molecular Characterization of Bovine Viral Diarrhea Virus and Its Interaction with the Host
Investigator: R. Donis
Status: New Animal Health project effective October 19, 1990

14-059 (Veterinary Science) Vet Diagnostic Lab System: Diagnostic Surveillance & Disease Investigation in NE Livestock & Poultry
Investigator(s): J. A. Schmitz, A. R. Doster, J. L. Johnson, D. Grotelueschen, E. D. Erickson & R. A. Moxley
Status: New State project effective December 13, 1990

16-055 (Food Science & Technology) Food Allergies and Sensitivities
Investigator(s): S. Taylor and J. Rupnow
Status: New Hatch project effective October 25, 1990

16-056 (Food Science & Technology) Molds and Mycotoxin Hazards in Foods, Feeds and the Environment
Investigator: L. B. Bullerman
Status: New Hatch project effective October 25, 1990

21-045 (Plant Pathology) Enhanced Nematode Diagnostics by Polymerase Chain Reaction
Investigator: T. O. Powers
Status: New Competitive Grant effective July 1, 1990

30-001 (Water Resources Center) Management of Irrigated Corn and Soybeans to Minimize Ground Water Contamination
Investigator: D. G. Watts
Status: New Special Grant effective July 1, 1990

43-049 (West Central Research & Extension Center) Increasing Fertilizer Nitrogen Use Efficiency in West-Central Nebraska
Investigator: G. W. Hergert
Status: New Hatch project effective August 1, 1990

92-017 (Consumer Science & Education) Factors Influencing Older Consumers' Experience & Satisfaction with Health Insurance
Investigator: K. Prochaska-Cue
Status: New Hatch project effective October 1, 1990

ARD ADVISORY COUNCIL UPDATE

The Agricultural Research Division Advisory Council (ARDAC) is a vital part of the research component of IANR. Elected faculty representing nine ARD districts advise and counsel the Director on ARD affairs and serve as liaison between administration and staff. Staff ideas and concerns are regularly discussed with the Director.

Many issues have been raised or addressed by the Council in its five meetings this fiscal year. Notable 1990-91 ARDAC activities to date include:

- Development of guidelines (ad hoc committee) and recommendation of annual Outstanding Young Faculty Research Awards recognizing achievements of ARD faculty at the assistant professor rank with five or less years of service.

- Refinement of revised ARD Research Project Guidelines to provide a working document accommodating the varied research conducted within ARD.

- Evaluation of Interdisciplinary Research Grant and International Travel Grant proposals (ad hoc committees) and funding recommendations to the Director.

- Prioritization of ESCOP Research Initiatives for ARD.

- Discussion of the peer review process and assignment of journal series numbers to book chapters.

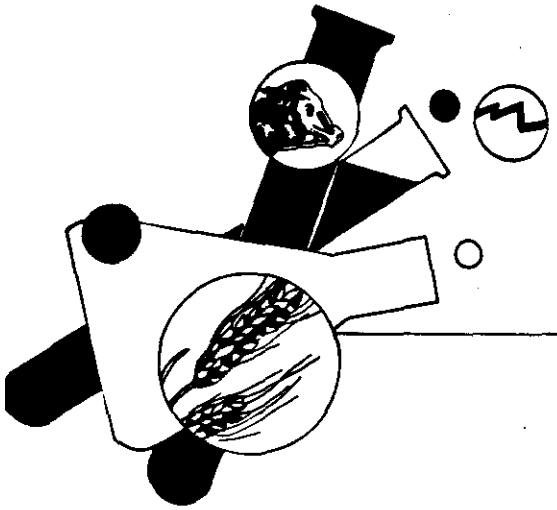
The Director and Associate Director have apprised the Council of ARD programs, University projects, upcoming workshops and grant opportunities, as well as State and Federal Legislative activities impacting IANR and UNL.

The Advisory Council serves ARD faculty and needs faculty input to be effective. Faculty are encouraged to communicate research-related issues to their district representatives for ARDAC discussion and resolution.

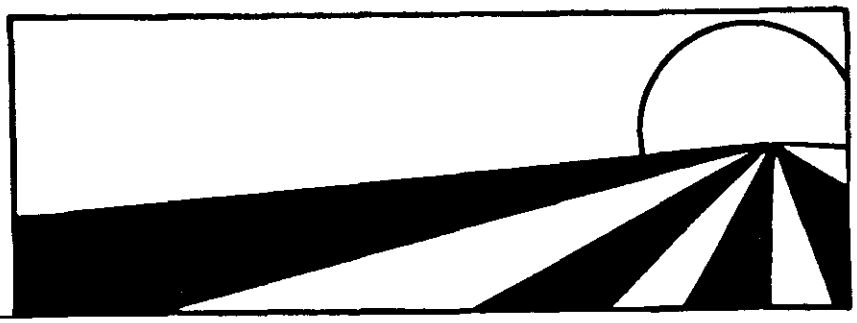
FUNDING SAES RESEARCH PROGRAMS

Presented below is a table giving the average proportion of state agricultural experiment stations research program funded from varying sources for fiscal year 1978, 1983, and 1989. For comparison, the data for Nebraska in fiscal year 1989 is included. About one-fourth of SAES funds come from federal sources (formula funds, grants and contracts). Nebraska derives a smaller proportion of funds from formula programs, CSRS competitive grants, and other federal competitive grants than the average of other SAESs. We have much higher levels of "Other USDA" funding, primarily cooperative agreements, than the average of other SAESs. The proportion of the Nebraska expenditures covered by state appropriations is somewhat lower than the average of all SAESs, whereas the reverse is true for industry grants and product sales.

	Average of SAESs			Nebraska AES
	1978	1983	1989	1989
	% of total			
Federal funds	30.4	28.1	26.2	26.6
Total USDA	22.0	20.7	17.4	21.5
CSRS Formula	16.7	15.5	11.1	9.3
Other CSRS	2.9	1.9	3.4	1.4
Other USDA	2.4	3.3	2.9	10.7
Other federal	8.4	7.4	8.8	5.1
State approp.	54.7	55.2	55.6	50.0
Industry grants	5.1	6.1	6.8	9.3
Product sales	5.8	6.2	5.5	14.2



ELLIOTT FUND GRANTS

The Anna H. Elliott Fund was established in the University of Nebraska Foundation in 1973 to support plant science research in Western Nebraska. As income to the fund allows, proposals are solicited and grants awarded normally at two-year intervals. The Elliott Advisory Committee recently met to review and select projects to be funded for the two year period beginning March 1, 1991. Twenty-eight proposals were submitted and the following projects were selected for funding:

Investigator(s)	Project Title	Total 2-Year Award
Adams, D. C. Nichols, J. Rush, I.	Subirrigated sandhills meadow forages for supplemental and complementary nutrients to sandhills rangeland	$19,000
Yonts, C. D. Wilson, R. G.	Interaction of herbicides and early season water stress on the production of dry beans	11,200
Coyne, D. P. Steadman, J. R. Lindgren, D. Nuland, D.	Stability and inheritance of architecture in dry beans for future use in direct harvesting and avoidance of white mold	17,000
Watkins, J. E. Baltensperger, D. Hein, G. French, R. Klein, R. Kerr, E.	Evaluation of Foxtail Millet, Green Foxtail, and other annual and perennial grass species as hosts for Wheat Streak Mosaic Virus and the Eriophyid Mite	18,000
Reece, P. E. Nichols, J. T.	An ecological study of Western Ragweed in a rangeland environment	16,006
Lyon, D. J. Power, J. F.	Effects of intermittent plowing in three wheat-fallow tillage systems	13,500
Moser, L. E. Waller, S. S. Miller, M. S. & Co-Invest.	Canopy structure and relation to organic matter decay in Sandhills Range exposed to different grazing regimes	16,642
Baltensperger, D. Nelson, L.	Development of improved Proso Millet cultivars for the Nebraska Panhandle	14,000
Hein, Gary	Development of a Pest Management Program for Russian Wheat Aphid in Western Nebraska	14,000