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ARD

Agricultural Research Division News

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Volume 33, Number 6

Comments from the Associate Dean

Partnerships and Linkages — The “Multi” Approach

In July of this year, the Agricultural Research Division submitted a Plan of Work (POW) for federal fiscal years 2000 - 2004 to the USDA Cooperative State Research, Education and Extension Service (CSREES). This POW was required of all of the state agricultural experiment stations throughout the nation and was mandated by the Agricultural Research, Extension and Education Reform Act of 1998 (AREERA), which was the research title of the last Farm Bill. The ARD POW was based in part on the last IANR Strategic Plan and Action Plans and will be revised as these are revised in the coming months.

One of the key components in the AREERA relates to the term “multi”. It mandates much greater efforts to use federal funding to carry out programs that are multi-state, multi-disciplinary and multi-function (i.e. research, extension, and education/teaching).

As a result of AREERA and other issues, significant efforts are under way at the national level to forge new linkages and partnerships with many other agencies besides USDA, as well as to strengthen linkages within the groups that function under the umbrella of USDA funding to the land-grant university system. One effort is the State Universities-USDA National Environmental Initiative (SUNEI) activity. This effort, which is funded from contributions by all of the state agricultural experiment stations, seeks to build linkages with a number of federal agencies. These agencies have research needs that can be effectively addressed by the land-grant university system but may not be familiar with the existing capabilities. Early efforts have resulted in some joint funding programs with USDA and other agencies that have enhanced the level of competitive funds available to the land-grant universities.

Another effort recently initiated is the Experiment Station Committee on Organization and Policy (ESCOP) Partnerships Committee. This committee also is charged with identifying and pursuing new opportunities for linkages and partnerships on a more broad scale than the SUNEI activity.

While preparing the ARD POW, in close communication with the Cooperative Extension Division which also had to submit a POW, we were gratified as we were documenting the level of “multi” program activities that we already have at the University of Nebraska. It is truly impressive to review the number of cooperative research arrangements that ARD faculty have with other institutions and states. One example is the multi-state research program, formally referred to as “Regional Research”. ARD faculty currently participate in 51 multi-state projects of the type eligible for funding support and in all four of the national regions. They also participate in over 75 multi-state coordinating committees in the four regions, providing immense opportunity for faculty to do multi-state cooperative research. ARD faculty also are involved in numerous other multi-state activities that are not part of the former Regional Research system. Many of these are with institutions in adjoining states, but many others are with distant states or within institutions and organizations outside the United States.

A good example of multi-state, multi-functional activity is the Blue River Basin project between faculty at Kansas State University and the University of Nebraska. These faculty have teamed in an effort to reduce non-point source run-off pollution to the Blue River Basin area of southeast Nebraska and northeast Kansas. In another example, Nebraska, Kansas State, and USDA scientists work together closely as a part of the Central Great Plains Grain Sorghum Breeding Program. At the western end of the state, UNL works with Colorado State and Wyoming Universities through the Central Plains Dry Bean and Sugar Beet group.



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On the international scene, examples of current multi-country research include participation by ARD faculty in two U.S. AID-funded Collaborative Research Support Programs (CRSPs), the Bean/Cowpea CRSP and the International Sorghum/Millet CRSP (INTSORMIL). In these CRSP activities, ARD faculty work with counterpart scientists in the Dominican Republic, Honduras, Puerto Rico, Malawi, Niger, Botswana, Namibia, Zambia, and Zimbabwe.

The above examples are only a small sampling of the many partnerships and linkages that actively involve ARD faculty. These partnerships were not mandated. They came about because faculty saw a need that could be better addressed in a cooperative way. Faculty also found that resources could be more effectively obtained through cooperative approaches. It was a pleasure to be able to cite some of the current "multi" examples when the ARD POW was being prepared for submission to Washington D.C. We are looking forward in future years to report on the additional accomplishments of these partnerships.

*Dale H. Vanderholm
Associate Dean and
Associate Director*

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% 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 1999-2000:

Name: Devinder Sandhu
Thesis area: Genetics & Plant Breeding
Department: Agronomy Department
Advisor: Kulvinder S. Gill

Name: Jun Ma
Thesis area: Nutrition
Department: Nutrition Science & Dietetics
Advisor: Nancy M. Betts

Name: Aruna P.N. Ambagala
Thesis area: MSIA/Vet Science
Department: Veterinary & Biomedical Sciences
Advisor: S. Srikumaran

Name: Douglas S. Zatechka, Jr.
Thesis area: MSIA/Vet Science
Department: Veterinary & Biomedical Sciences
Advisor: Marjorie Lou

Hardin Distinguished Graduate Fellowship for 1999-2000

The recipient of the Hardin Distinguished Graduate Fellowship for 1999-2000 is **Tiffany Heng-Moss** in the Department of Entomology. 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. She will receive a \$2,000 supplement to her graduate assistantship and the Entomology Department will receive \$1,000 of operational support for her research program.

Tiffany is completing her Ph.D. in the Department of Entomology; her thesis deals with "Identifying Buffalograss Germplasm Resistant to the Chinch Bug, *B. occiduus*". Tiffany has broad-based knowledge in biology and ecology. Her M.S. research on mealybug-tur interactions was comprehensive and quite extensive. Her Ph.D. research deals with sources of arthropod resistance in buffalograss and will identify the underlying morphological, physiological and biochemical arthropod-plant interactions. Tiffany has been recognized with scholarships and two fellowships for her high academic performance and scholastic achievement. She has six refereed publications and contributed to or authored one Extension and 14 nonrefereed publications. She received her B.S. and M.S. from the University of Nebraska. Dr. Fred Baxendale is her advisor.

ARD Advisory Council Election Results

In recent elections, the following faculty members were selected to serve on the ARD Advisory Council for a three-year period ending June 30, 2002.

District 1: **Susan Cuppett** (Food Science & Technology)
Representing faculty in Agricultural Economics and Food Science & Technology

District 6: **Blair Siegfried** (Entomology)
Representing faculty in Biometrics,
Entomology, Veterinary & Biomedical
Sciences

District 7: **Thomas Powers** (Plant Pathology)
Representing faculty in Biochemistry,
Horticulture and Plant Pathology

Continuing ARD Advisory Council members are:

District 2: **Thomas G. Franti** (Biological Systems
Engineering)
Representing faculty in Biological
Systems Engineering, Northeast R&E
Center, Southeast R&E Center and
South Central R&E Center

District 3: **Timothy J. Arkebauer** (Agronomy)
Representing faculty in Agronomy

District 4: **James Brandle** (School of Natural
Resource Sciences)
Representing faculty in the School of
Natural Resource Sciences (Ag
Meteorology, Water Center/Environ-
mental Programs, and Forestry,
Fisheries & Wildlife)

District 5: **Richard Grant** (Animal Science)
Representing faculty in Animal Science

District 8: **Lois Scheyer** (Textiles, Clothing &
Design)
Representing faculty in Agricultural
Leadership, Education and
Communications; Family and
Consumer Sciences; Nutritional
Science and Dietetics; and Textiles,
Clothing and Design.

District 9: **Don C. Adams** (West Central R&E
Center)
Representing faculty in the West
Central R&E Center and the Panhandle
R&E Center

Jim Brandle will serve as chair and Tom Franti as secretary of the ARD Advisory Council during fiscal year 2000. Faculty are encouraged to bring research-related issues to their representative for discussion and resolution at council meetings.

ARD expresses appreciation to Wesley Peterson, Gary Yuen, and Rodney Moxley for their dedicated support of the ARD Advisory Council during the past three years. We wish them continued success in their research programs.

ARD Travel Reimbursement Program for Prospective Graduate Students

The purpose of the ARD Prospective Graduate Student Travel Reimbursement Program is to assist in attracting high quality graduate students into ARD research programs. The program is for recruitment purposes and is not intended to support interviews of prospective graduate students. The objective is to assist departments in convincing students who have been offered an assistantship to actually enroll at UNL.

A special account will be established in the ARD Dean's office to provide administrative units with a source of funds to partially reimburse travel expenses for prospective graduate students who wish to visit the department/district center before making a decision. Each ARD administrative unit will be eligible to receive funding to reimburse up to two (2) students per calendar year from this account. Only individuals who have been offered graduate research assistantships will be eligible for reimbursement.

ARD administrative units may receive funds from this program to assist in reimbursing accounts from which funds have been taken to cover some or all of the expenses incurred by prospective graduate students (who have been offered an assistantship) while visiting the UNL campus. Amounts equal to 50 percent of the student's expenses or \$200, whichever is less, can be awarded to help defray the costs of transportation, lodging and meals. ARD Guidelines can be obtained by contacting the ARD office.

Sampson Range and Pasture Management Endowments

Six proposals were submitted to the ARD Sampson Range and Pasture Management Endowment. Five proposals were funded for 1999-2000. This endowment was established in the University of Nebraska Foundation by the widow of Arthur William Sampson to support range and pasture management programs at the University of Nebraska. Sampson proposals were awarded to the following:

C. Montealegre, J. Blumenthal (PREC), K. Vogel (ARS)
"The Genetic Diversity of Rhizobia Associated with
Native Legumes in Western Nebraska"

Total Funded: \$10,000

Funding Period: May 1, 1999 - April 30, 2000

J. Huddle, J. Stubbendieck (Agronomy), T. Minnick, D. Wedin (SNRS)
 "Competitive Interactions Grasses with Eastern Redcedar"
 Total Funded: \$9,974
 Funding Period: May 1, 1999 - April 30, 2000

J. Volesky (WCREC), P. Reece (PREC), W. Schacht (Agronomy)
 "Defoliation Effects on Root Growth of Subirrigated Meadow Forage Species"
 Total Funded: \$10,000
 Funding Period: May 1, 1999 - April 30, 2000

P. Reece (PREC), W. Schacht, L. Moser (Agronomy), J. Volesky (WCREC)
 "Short-term Drought and Defoliation Effects on Native Warm-season Grasses"
 Total Funded: \$10,000
 Funding Period: May 1, 1999 - April 30, 2000

D. Adams (AniSci/WCREC), R. Clark (AgEco/WCREC), I. Rush (AniSci/PREC)
 "Matching Nutrient Requirements of Spring Calving Cows with Nutrients in Sandhills Range Forage"
 Total Funded: \$5,000
 Funding Period: May 1, 1999 - April 30, 2000

Anna Elliott Proposals

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Twenty-one proposals were received for the Anna H. Elliott fund. This foundation fund was established in the University of Nebraska Foundation with the stipulation that earnings be used for research in some area of agriculture, particularly in the field of plant sciences, and with preference to plant science in western Nebraska. Ten proposals were funded as follows:

Jim Steadman (Plant Pathology), Dermot Coyne (Horticulture)
 "Genetics of and Agronomic Merit of Adult Plant Resistance to Rust, Leafhopper Resistance, and Leaf Pubescence in Dry Beans in Western Nebraska"
 Total Funded: \$ 8,300
 Funding Period: April 1, 1999 - March 31, 2000

Drew Lyon (PREC), David Baltensperger (PREC), Jurg Blumenthal (PREC), Dillon Feuz (AgEcon/PREC), Burt Weichenthal (AniSci/PREC)
 "Solving the Transition Dilemma for Moving from Summer Crops to Winter Wheat"
 Total Funded: \$12,000
 Funding Period: April 1, 1999 - March 31, 2000

Robert Wilson (PREC), Alex Martin (Agronomy)
 "Using Freezing Temperatures Plus Growth Regulations to Control Biennial and Perennial Weeds"
 Total Funded: \$13,700
 Funding Period: April 1, 1999 - March 31, 2000

Jerry D. Volesky (WCREC), Walter Schacht (Agronomy), Patrick Reece (PREC)
 "Effects of Spring Grazing on Utilization of Key Forage Species on Upland Sandhills Range"
 Total Funded: \$12,900
 Funding Period: April 1, 1999 - March 31, 2000

Jurg Blumenthal (PREC), David Baltensperger (PREC)
 "Intensive Nitrogen Management for Competitive Yields of Irrigated Wheat in Western Nebraska"
 Total Funded: \$11,000
 Funding Period: April 1, 1999 - March 31, 2000

Gary L. Hein (Entom/PREC), Roy French (PlantPath/USDA)
 "Movement Patterns of Wheat Curl Mite Population in Various Agroecosystems and its Influence on Virus Epidemiology"
 Total Funded: \$10,380
 Funding Period: April 1, 1999 - March 31, 2000

David Baltensperger (PREC), Robert Shearman (Horticulture), John E. Watkins (Plant Pathology)
 "Kentucky Bluegrass Seed Yield as Influenced by Stem Rust Incidence and Post-Harvest Crop Debris Management"
 Total Funded: \$12,000
 Funding Period: April 1, 1999 - March 31, 2000

David Baltensperger (PREC), Robert Graybosch (Agronomy)
 "Development of Waxy Proso Millet Cultivars Adapted to Western Nebraska"
 Total Funded: \$11,000
 Funding Period: April 1, 1999 - March 31, 2000

Patrick Reece (PREC), Walter Schacht (Agronomy), Jerry Volesky (WCREC), Lowell Moser (Agronomy)
 "Short-term Drought and Defoliation Effects on Native Warm-season Grasses"
 Total Funded: \$ 5,990
 Funding Period: April 1, 1999 - March 31, 2000

Drew Lyon (Agronomy/PREC), Steve Mason (Agronomy)
 "Pearl Millet as a Grain Crop for Western Nebraska"
 Total Funded: \$15,000
 Funding Period: April 1, 1999 - March 31, 2000

Proposals Submitted for Federal Grants

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The following is a listing of proposals that were submitted after June 1999 by faculty for federal grant programs. While not all grants will be funded, we are appreciative of each faculty member's effort in submitting proposals to the various agencies.

Lori Allison — NSF — Nuclear-Encoded Sigma Factors Regulating Plastid Gene Expression — \$357,032

Robert J. Spreitzer — U.S. Dept. of Energy — Role of the Rubisco Small Subunit — \$430,742

Susan Fritz and John Barbuto — USDA-Rural Business-Cooperative Service — Addressing Agricultural Leadership Needs of Future Evolving Rural Cooperatives — \$73,294

Stephen Ragsdale — NIH — Enzymology of the Reductive Acetyl-CoA Pathway — \$1,585,245

Qi "Steve" Hu — NSF — Orographic and Land-Cover Effects on Regional Circulation and Precipitation in the Great Plains of the United States — \$223,818

Edward J. Peters — U.S. Fish & Wildlife Service — Habitat Use and Movement of Sturgeon in the Lower Platte River, Nebraska — \$13,592

Edward J. Peters — U.S. Fish & Wildlife Service — Habitat Use and Movement of Pallid Sturgeon in the Lower Platte River, Nebraska — \$98,720

New or Revised Projects

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

NEB-10-138 (Agricultural Economics) Measurement of Competitiveness of U.S. Beef, Soybean, Wheat and Corn Production

Investigator: L.E. Fulginiti

Status: New Hatch project effective May 1, 1999

NEB-10-139 (Agricultural Economics) Rural Sustainability: The Relationship Between Community Structure, Ag Structure and Social Class

Investigator: J.C. Allen

Status: New Hatch project effective May 1, 1999

NEB-10-140 (Agricultural Economics) The Measurement of Efficiency in Resource Use in Rural Areas: A Stochastic Frontier Analysis

Investigator(s): Sam Cordes, A.M. Azzam, J.C. Allen

Status: New Hatch project effective June 1, 1999

NEB-11-113 (Biological Systems Engineering) Uptake and Metabolic Effects of Pesticide Combinations on Mammalian Systems

Investigator: R.M. Brand

Status: New Hatch project effective April 1, 1999

NEB-11-114 (Biological Systems Engineering) Consideration of Imprecision in Pollution Prevention Systems Engineering

Investigator: Wayne Woldt

Status: New Hatch project effective June 1, 1999

NEB-11-115 (Biological Systems Engineering) Improved Anaerobic Lagoon Design and Management for Odor Control

Investigator: D.D. Schulte

Status: New Hatch project effective June 1, 1999

NEB-11-116 (Biological Systems Engineering) Engineering Problems of Flow Measurement and Control in Agricultural Industries

Investigator: M.F. Kocher

Status: New Hatch project effective June 1, 1999

NEB-11-117 (Biological Systems Engineering) Application of Fuzzy Systems Analysis in Biological Systems Engineering

Investigator: D.D. Jones

Status: New Hatch project effective June 1, 1999

NEB-11-118 (Biological Systems Engineering) Development of Simulation and Optimization Models for Watershed Management

Investigator: D.L. Martin

Status: New Hatch project effective June 1, 1999

NEB-13-096 (Animal Science) Forage Protein Characterization and Utilization for Cattle

Investigator(s): T.J. Klopfenstein, L.E. Moser, W. Schacht

Status: Revised Hatch project contributing to NC-189 effective October 1, 1998

NEB-13-147 (Animal Science) Interrelationships Among Liver Metabolism, Nutrient Intake, and Growth Criteria in Pigs

Investigator(s): P.S. Miller and Austin Lewis

Status: New Hatch project effective June 1, 1999

NEB-13-148 (Animal Science) Improving the Efficiency of Nitrogen and Amino Acid Utilization by Pigs

Investigator(s): A.J. Lewis and P.S. Miller

Status: New Hatch project effective July 1, 1999

NEB-21-075 (Plant Pathology) Application of PCR Approaches for Nematode Identification and Epidemiology

Investigator: T.O. Powers

Status: New Hatch project effective May 1, 1999

NEB-21-076 (Plant Pathology) Pathogenic Determinants of Phytopathogenic Fungi
Investigator: M.B. Dickman
Status: New Hatch project effective June 1, 1999

NEB-40-005 (School of Natural Resource Sciences) Ecology of Pallid Sturgeon and Associated Fishes in the Platte River, Nebraska
Investigator: E.J. Peters
Status: New Hatch project effective June 1, 1999

NEB-43-066 (West Central Research & Extension Center) Selection, Development and Propagation of Native Herbaceous Landscape Plants
Investigator: D.T. Lindgren
Status: New Hatch project effective May 1, 1999

NEB-44-057 (Panhandle Research & Extension Center) Studies of Drought and Defoliation Effects on Range Grasses Needed to Optimize Future Grazing Research
Investigator(s): P.E. Reece, W.H. Schacht, J.D. Volesky and L.E. Moser
Status: New Hatch project effective May 1, 1999

NEB-44-058 (Panhandle Research & Extension Center) Integrated Management Systems for Arthropod Pests in Wheat and Other Crops in Western Nebraska
Investigator: G.L. Hein
Status: New Hatch project effective May 1, 1999

NEB-94-025 (Textiles, Clothing & Design) Development of Textile Materials for Environmental Compatibility and Human Health and Safety
Investigator: Lois Scheyer
Status: New Hatch project effective October 1, 1996 that contributes to S-272



Grants and Contracts Received June and July, 1999

Agronomy

Baenziger, Stephen — USDA/ARS	\$68,293
Cassman, Kenneth — Pioneer Hi-Bred International	25,000
Eghball, Bahman — USDA/ARS	80,000
Shelton, David — Haven Smith Memorial Funds via UN Foundation	13,982
Specht, James — USDA/ARS	70,000
Stubbendieck, James — Nebraska Environmental Trust	30,700
Miscellaneous grants under \$10,000 each	67,724

Animal Science	
Klopfenstein, Terry and Lewis, Austin — Fats and Proteins Research Fund	14,000
Milton, Todd — Hoechst Roussel Vet	39,000
Miscellaneous grants under \$10,000 each	32,433
Agricultural Research & Development Center	
Duncan, Dan — Barta Brothers Fund	20,000
Biochemistry	
Banerjee, Ruma — Nebraska Dept. of Health and Human Services	30,000
Spreitzer, Robert — U.S. Department of Energy	94,000
Biological Systems Engineering	
Brand, Rhonda — American Diabetes Association	87,745
Entomology	
Meinke, Lance — USDA/ARS	63,255
Siegfried, Blair — Mycogen	15,225
Siegfried, Blair — Novartis	25,000
Miscellaneous grants under \$10,000 each	40,450
Food Science & Technology	
Miscellaneous grants under \$10,000 each	527,914
Horticulture	
Coyne, Dermot — Michigan State University	70,118
Miscellaneous grants under \$10,000 each	21,375
Northeast Research & Extension Center	
Miscellaneous grants under \$10,000 each	23,000
Nutritional Science & Dietetics	
Miscellaneous grants under \$10,000 each	9,700
Panhandle Research & Extension Center	
Smith, John — Western Sugar Company	20,433
Wilson, Robert — Nestle	15,000
Miscellaneous grants under \$10,000 each	106,182
Plant Pathology	
Miscellaneous grants under \$10,000 each	28,888
School of Natural Resource Sciences	
Comfort, Stephen and Shea, Pat — USGS	12,550
Hu, Steve — Missouri Public Service Commission	20,000
Spalding, Roy — USGS	16,000
Wilhite, Donald — Dept. of Commerce — NOAA	15,000
Miscellaneous grants under \$10,000 each	10,628
South Central Research & Extension Center	
Miscellaneous grants under \$10,000 each	50,755
Veterinary & Biomedical Sciences	
Cirillo, Jeffrey — NIH-NAID	100,326
Miscellaneous grants under \$10,000 each	23,290
West Central Research & Extension Center	
Hergert, Gary — Central Platte NRD	25,000
Miscellaneous grants under \$10,000 each	34,750
Grand Total	\$1,947,716

Diane says

When it is definitely settled that a thing can't be done, watch someone do it.