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ARD

Agricultural Research Division News

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June 2001 Volume 35, Number 6

Comments from the Dean

Dear Colleagues:

The busy summer season is about to end and the even more hectic fall season will begin later this month. During the summer, I have been privileged to attend several field days and expect to attend several more before the end of August. It is a source of great pride to observe the exciting field research that is under way throughout Nebraska and to interact with stakeholders who attend the field days. There is no doubt that our clientele are not only interested in our research projects but see the results of these efforts as useful in improving the profitability of their operations. Thanks to all of the ARD faculty who have been presenters or facilitators at IANR field days.

The University of Nebraska has recently announced two major funding opportunities. The Tobacco Settlement Fund program will emphasize life science research that is fundable by NIH. Proposals for Seed Grants, Standard Grants and Major Grants must be directed at research activities that will improve UNL's competitiveness in NIH-supported programs. Approximately $2.8 million will be available for distribution this fiscal year. The RFP for the Nebraska Research Initiative also has been distributed. Approximately $6 million should be available for distribution effective July 1, 2002. Proposals are welcome in several program areas identified in the RFP but all proposals must present convincing arguments that the research will contribute to economic development of the state. ARD faculty are urged to develop proposals for these grant programs.

We welcome the arrival of Dr. Prem Paul, the new Vice Chancellor for Research. Dr. Paul's expertise is in veterinary virology but he has extensive experience in research administration at Iowa State University. Prem is knowledgeable and excited about the research currently carried out by ARD scientists. We look forward to working closely with Dr. Paul in upcoming years to strengthen strong research programs. Prem has a great deal of experience with NIH competitive grant processes, and he will be a strong advocate for enhancement of life science research throughout the UNL campus.

The ARD Office is currently in a mess because our floor coverings are being replaced after more than 12 years of having countless faculty, staff, students and visitors visit our facility. Dora Dill and Nelvie Lienemann have done a great job of coordinating the phased furniture moving and carpet laying. We hope that the new floor covering will last for at least 12 years since no ARD personnel want to go through this process again prior to their retirement. Although the ARD office appears disorganized, please feel free to come in. We will do our best to assist you in any way possible. Thanks for your willingness to ignore our current mess. We are betting that our office will be finished before the completion of the East Campus Mall project.

Darrell W. Nelson
Dean and Director

National C-FAR A New Advocacy Group for Research Funding

On January 31, 2001, the official organizational meeting of the National Coalition of Food and Agricultural Research (National C-FAR) was held in Washington, D.C. The *mission* of National C-FAR is to secure additional resources to adequately fund relevant and high quality research and related outreach programs in agricultural production systems, natural resources and conservation, expanding agricultural

markets, rural economic development, and human nutrition and food safety.

The National C-FAR *goal* is to form a broad-based non-partisan coalition of stakeholders of food, agricultural, and natural resources sectors. Its specific objectives are to: a) increase and enhance federal investments in U.S. food and agricultural research and extension; and b) expand the participation by stakeholders in priority setting and funding.

The National C-FAR *target* is to double federal funding of food, agricultural, and natural resources research and education programs over the next five years.

In recent years federal funding for research in food, agricultural, and natural resources areas has been static or declining. While research institutions and stakeholders alike have been concerned about this, there has not been a unified approach to help reverse this trend. National C-FAR is a welcome development in this regard. It is a broad non-partisan coalition, with members ranging from environmental groups to commodity organizations, and from producers to universities. It is modeled after a statewide coalition in Illinois that has been very successful in increasing food and agricultural research at Illinois Universities. The members recognize that to be successful in this effort, they need to work together to achieve national prominence for these issues.

Shortly after it was organized in January, 2001, National C-FAR membership had reached 60 members. The membership includes the following organizations: American Crop Protection Association, American Dietetic Association, American Farm Bureau Federation, American Soybean Association, Association of American Veterinary Medical Colleges, CoFARM, Institute of Food Technologists, International Food Information Council, National Corn Growers Association, National Cotton Council, National Council of Farmer Cooperatives, National Pork Producers Council, USA Rice Federation, and Wildlife Management Institute.

If the coalition is successful in its efforts and achieves its target of doubling federal funding, an additional $2 billion will be available annually for the areas identified in its mission statement. The group intends for this to be net new funding on a continued basis that will complement and not compete with/or displace the existing portfolio of federal research and extension programs in food, agriculture, nutrition, conservation, and natural resources. C-FAR also intends the funding to support a balanced portfolio of both extramural and intramural research on a competitive grant and a programmatic basis. Funding would be for a mix of applied and basic research and would include funding for extension outreach. In addition to advocating for increased funding, the coalition also intends to be an active voice in influencing national research goals, priorities and outcomes.

The initial activities of National C-FAR have resulted in a great deal of enthusiasm. This coalition has an excellent opportunity for making agricultural research a national priority, which has not been the case in recent years. Because of its diverse membership and emphasis on stakeholder-determined research priorities, it has credibility and strength that has not existed in an advocacy group in recent years. We are very supportive of the outcomes that National C-FAR hopes to accomplish, and we are optimistic that this approach can have a significant impact on federal research funding in the future.

While we are not aware of a website for National C-FAR yet, considerable information regarding the coalition and its activities can be found on the web using National C-FAR as the key words.

Hatch Funds Allocations

Allocations of increased hatch funds were distributed July 1, 2001, to four different research projects out of the 21 that were received. The intent of this program is to provide two years of seed funding that will allow teams of faculty to develop enough data to be competitive for significant external funds. The expectation is that these Hatch Funds will leverage substantial competitive grant dollars. These awards were restricted to interdisciplinary teams conducting research in various areas that were consistent with the new UNL priorities and with the priorities communicated to Congress when increased Hatch Funds were being requested: (i) strengthening communities; (ii) value-added processing of agricultural commodities; (iii) food safety; (iv) agro-ecosystems; and (v) functional genomics and proteomics. Those receiving funding are:

Don Weeks (BioChemistry), Tom Clemente (Agronomy/Horticulture), Lori Allison (BioChemistry)
Engineering Plants for Increased Photosynthetic Efficiency: Introduction of the CO_2 Concentration Mechanism from C_1 Plants into C_3 Plants
Amount Received: $38,250
Funding Period: July 1, 2001 — June 30, 2002

Martin Dickman (Plant Pathology), David Dunigan (BioChemistry), Steve Baenziger (Agronomy/Horticulture), Tom Clemente (Agronomy/Horticulture), Tala Awada (School of Natural Resource Sciences)
Novel Methods for Developing Broad Spectrum Stress Tolerant Plants
Amount Received: $38,250
Funding Period: July 1, 2001 — June 30, 2002

Michael Zeece (Food Science and Technology), Shelly McKee (Food Science and Technology), Steve Jones (Animal Science)

Proteomic Analysis of Stress Syndrome in Animals
Amount Received: $38,250
Funding Period: July 1, 2001 — June 30, 2002

Jose Payero (West Central Research and Extension Center), Steve Ensley (West Central Research and Extension Center), Gary Hergert (West Central Research and Extension Center)

Environmental Impact of Land Application of Animal Manure as Fertilizer for Irrigated Corn
Amount Received: $38,250
Funding Period: July 1, 2001 — June 30, 2002

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 2001-2002:

Name: Bingxin Yu
Thesis area: Agricultural Economics
Department: Agricultural Economics
Advisor: Richard Perrin

Name: Hikmet Budak
Thesis area: Plant Breeding/Genetics
Department: Agronomy/Horticulture
Advisor: P. Stephen Baenziger

Name: Neil Heckman
Thesis area: Horticulture/Forestry
Department: Agronomy/Horticulture
Advisors: Roch Gaussoin and Garald Horst

Name: Steve J. Kitt
Thesis area: Nonruminant Nutrition
Department: Animal Science
Advisors: Phil Miller and Austin Lewis

Name: Janice Rumph
Thesis area: Breeding and Genetics
Department: Animal Science
Advisor: L. Dale Van Vleck

Name: Stephanie Wesolowski
Thesis area: Genetics
Department: Animal Science
Advisor: Daniel Pomp

Name: Emily Ross
Thesis area: BioChemistry
Department: BioChemistry
Advisors: Robert Klucas and Gautam Sarath

Name: Federico Ocampo
Thesis area: Entomology
Department: Entomology
Advisors: Brett Ratcliffe and Mary Jameson

Name: Peter L. Clark
Thesis area: Entomology
Department: Entomology
Advisor: John E. Foster

Name: Yong Jun Goh
Thesis area: Food Science and Technology
Department: Food Science and Technology
Advisor: Robert W. Hutkins

Name: Gary "Lee" Frantz
Thesis area: Human Resources and Family Sciences
Department: Nutritional Science and Dietetics
Advisor: Fayrene Hamouz

Name: Peter Mullin
Thesis area: Plant Pathology
Department: Plant Pathology
Advisor: Thomas Powers

Name: Muralidhar Deshpande
Thesis area: MSIA/Veterinary Science
Department: Veterinary and Biomedical Sciences
Advisor: S. Srikumaran

Hardin Distinguished Graduate Fellowship for 2000-2001

The recipient of the Hardin Distinguished Graduate Fellowship for 2001-2002 is **Kevin J. Delaney** 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. He will receive a $2,000 supplement to his graduate assistantship and the Entomology

Department will receive $1,000 of operational support for his research program.

Delaney is completing his Ph.D. in the Department of Entomology and his dissertation deals with "Addressing the physiological impact of both biotic and abiotic plant stress". Kevin's work will provide important information on the interactions of biotic and abiotic stress on plants' physiology and further, will provide evolutionary insights into the tradeoffs of plant defense mechanisms versus physiological tolerance. His Ph.D. research deals with the physiological and biochemical mechanisms underlying reductions in photosynthesis associated with insect injury of *Asclepias syriaca*, common milkweed. This is a very exciting and challenging aspect of plant stress research. Kevin has been recognized as an "Outstanding Master's Student" in the Department of Biological Sciences at the University of Cincinnati in 1997; has received various other honors and grants as well as presented several oral and poster presentations. Dr. Leon Higley is his advisor.

Shear-Miles Fellowship 2001-2002

The Shear-Miles Agricultural Scholarship and Fellowship was established at the NU Foundation with a $173,000 gift from the estate of Dorothy S. Miles. James Dennis, executor of the Miles Estate, said Dorothy Miles planned that the gift memorialize her father and father-in-law, Corneilus Lott Shear and George Miles. Shear and Miles both graduated from the College of Agriculture at the University of Nebraska. Shear received his bachelor's and master's degrees in 1887 and 1901 and Miles graduated in 1903. This endowed fund provides scholarships and fellowships to benefit the Agricultural Research Division and the College of Agricultural Sciences and Natural Resources.

Two students listed below will be recipients of this $2,000 award, given for the second time by ARD:

Name:	Kim Pavelka
Thesis area:	Crop-Weed Ecophysiology
Department:	Agronomy/Horticulture
Advisor:	John Lindquist

Name:	Nouri Maman
Thesis area:	Water/Nitrogen Efficiency
Department:	Agronomy/Horticulture
Advisors:	Steve Mason and Drew Lyon

ARD Advisory Council Election Results

The following faculty members have been elected to the ARD Advisory Council for a three-year period ending June 30, 2004:

District 3: **Achim Dobermann** (Department of Agronomy and Horticulture)

District 4: **David Wedin** (School of Natural Resource Sciences)

District 9: **Jerry Volesky** (Panhandle Research and Extension Center and West Central Research and Extension Center)

Continuing ARD Advisory Council members are:

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

District 2: **Roger Selley** (South Central Research and Extension Center). Representing faculty in the Biological Systems Engineering Department, Northeast Research and Extension Center, and South Central Research and Extension Center.

District 5: **Austin Lewis** (Animal Science Department). Representing Animal Science Department faculty.

District 6: **Blair Siegfried** (Entomology Department). Representing faculty in the Biometry, Entomology, and Veterinary and Biomedical Sciences Departments.

District 7: **Thomas Powers** (Plant Pathology Department). Representing faculty in the Biochemistry and Plant Pathology Departments.

District 8: **John DeFrain** (Family and Consumer Sciences Department). Representing faculty in Agricultural Leadership, Education and Communications, Family and Consumer Sciences, Nutritional Science and Dietetics, and Textiles, Clothing and Design Departments.

Please join the ARD staff in expressing appreciation to Don Adams, Tim Arkebauer, and Jim Brandle for their dedicated support of the ARD Advisory Council during the past three years. Their contributions have been invaluable in surfacing faculty issues to ARD administrators. We wish them continued success in their faculty careers.

Proposals Submitted for Federal Grants

The following is a listing of proposals that were submitted after June 1, 2001, by faculty for federal grant programs. While not all grants will be funded, we are appreciative of the faculty members' outstanding efforts in submitting proposals to the various agencies.

Roy Spalding, Daniel D. Snow and **Mary E. Exner** — USEPA — Demonstration of Leaching Behavior of Harness TM (Acetochlor) and Balance TM (Isoxaflutole): Replacement Products for Alachlor and Atrazine — $69,774

Tom Clemente — USDA through IMBA — Improved *Agrobacterium*-mediated Transformation of Maize — $129,436

Laura L. Hungerford — NIH — Modeling Ecology, Dynamics and Spatial Spread of Raccoon Rabies — $1,054,738

Z B Mayo — USEPA — Management of Predators and Incorporation of Predator Counts into Sorghum Aphid Management Programs — $40,000

Lori A. Allison — USDOE — ZmSig2, a nuclear-encoded transcription factor targeted to chloroplasts and mitochondria — $355,983

Dann Husmann, Susan Fritz and **Leverne Barrett** — USDA/CSREES — Integrating the University Land Grant Mission in Advancing Rural Community Viability — $599,904

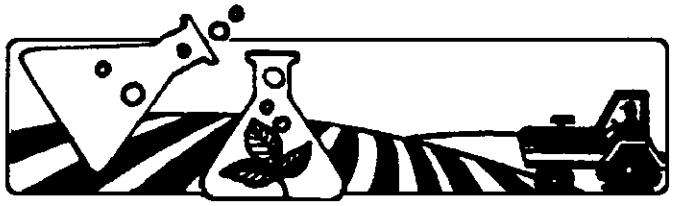
Richard Grant — USDA/ARS — Evaluation of Chemical Composition and *In Vitro* Digestibility of Sorghum Brown Midrib Isolines — $30,000

John S. Weber — NIH thru Baylor College of Medicine — Phenotype Screens for Bone Marrow Failure — $70,758

Sherilyn C. Fritz and **Kyle Hoagland** — NSF through Oklahoma State — Resurrection Ecology of Prairie Lakes — $328,086

Gary Hein, Robert Harveson, Robert Wilson and **Paul Burgener** — USDA/IFAFS through Colorado State — Sustainable IPM Irrigated Cropping Systems on the High Plains — $533,896

Raymond Chollet — NSF — Molecular/Biochemical Investigations of PEPC (and its Novel Ser/Thr-Kinase) and SuSy (Nodulin-100), Two Phosphorylated Metabolic Enzymes in Plants — $663,114



Grants Received June and July 2001

Agricultural Economics	
Miscellaneous grants under $10,000 each	$2,436
Agronomy	
Baenziger, P.S. — USDA/ARS	110,001
Mackenzie, Sally — USDOE	95,001
Spalding, Roy — Nebraska Dept. of Agriculture	40,000
Specht, James — USDA/ARS	35,000
Staswick, Paul and **Tom Clemente** — University of Minnesota	35,000
Miscellaneous grants under $10,000 each	105,150
Animal Science, School of Natural Resource Sciences, Agronomy and Horticulture	
Klopfenstein, Terry, James Brandle and **Charles Francis** — USDA/CSREES	55,067
Animal Science	
Grant, Richard — Garrison and Townsend, Inc.	12,305
Klopfenstein, Terry, David Smith, Rodney Moxley, Laura Hungerford and **Suzanne Hinkley** — Nebraska Beef Council	100,000
Klopfenstein, Terry — Nutrition Physiology	50,000
Miscellaneous grants under $10,000 each	19,875
Biochemistry	
Banerjee, Ruma — American Heart Association	19,000
Ragsdale, Stephen — USDOE	110,000
Biological Systems Engineering	
Koelsch, Rick — USDA through University of Wisconsin	205,472
Miscellaneous grants under $10,000 each	7,500
Entomology	
Miscellaneous grants under $10,000 each	77,800
Food Science and Technology	
Miscellaneous grants under $10,000	67,244
Horticulture	
Miscellaneous grants under $10,000 each	25,900
Nutritional Science and Dietetics	
Lewis, Nancy — Kraft Foods	25,000
Zempleni, Janos — University of Arkansas Medical Sciences	114,808
Zempleni, Janos — NIH	170,000
Northeast Research and Extension Center	
Miscellaneous grants under $10,000 each	25,250

Panhandle Research and Extension Center	
Miscellaneous grants under $10,000 each	147,550
Plant Pathology	
Mitra, Amit — USDA/FAS	15,000
Steadman, James and Loren Giesler — University of Wisconsin	11,375
Miscellaneous grants under $10,000 each	20,000
School of Natural Resource Sciences	
Comfort, Steven — Sandia National Lab	75,000
Miscellaneous grants under $10,000 each	7,250
South Central Research and Extension Center	
Miscellaneous grants under $10,000 each	11,600
Veterinary Science and Biomedical Sciences	
Cirillo, Jeff — NIH	110,612
Osorio, Fernando — National Pork Board	15,000
Miscellaneous grants under $10,000	5,190
West Central Research and Extension Center	
Miscellaneous grants under $10,000 each	46,294
Grand Total	**$1,972,680**

New or Revised Projects

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

NEB-10-141 (Ag Economics) Legal Aspects of Nebraska Agricultural and Natural Resources Policy
Investigator: J.D. Aiken
Status: New Hatch project effective June 1, 2000

NEB-10-146 (Ag Economics) Enforcement Issues and Efficiency in the Agri-Food Marketing System: Genetic Modification, Organic Agriculture, and Government Intervention
Investigator: K. Giannakas
Status: New Hatch project effective February 1, 2001

NEB-10-147 (Ag Economics) State Corporate Restrictions and Industry Structure
Investigator: A.M. Azzam
Status: New Competitive Grant effective June 15, 2001

NEB-11-121 (Biological Systems Engineering) Fuzzy Crop/Weed Image/Signal Analysis for Variable-Rate Water and Chemical Application
Investigator: G.E. Meyer
Status: New Hatch project effective October 1, 2000

NEB-12-284 (Agronomy) Evapotranspiration: Linking Ground Water Hydrology with Local Climate in the Nebraska Sand Hills
Investigator(s): T.J. Arkebauer, D.B. Billesbach, D.C. Gosselin, F.E. Harvey and D.A. Wedin
Status: New State project effective July 1, 2001

NEB-13-152 (Animal Science) Effect of Virus Infection on Cellular Glutathione Concentration
Investigator(s): D.R. Brink, C. Kelling, and S. Srikumaran
Status: New State project effective July 1, 2001

NEB-17-076 (Entomology) Population Genetics and Molecular Mechanisms of Resistant Western Corn Rootworm
Investigator(s): B.D. Siegfried, L.J. Meinke and R.J. Wright
Status: New USDA/IFAFS Grant effective September 15, 2000

NEB-19-010 (Food Science and Technology) Development and Quality/Safety Enhancement of Speciality Food Products
Investigator: S.L. Taylor
Status: New USDA Special Grant effective July 1, 2001

NEB-19-011 (Food Science and Technology) Alliance for Food Protection
Investigator: S.L. Hefle
Status: New USDA/Special Grant effective June 1, 2001

NEB-20-056 (Agronomy/Horticulture) Integrated Turfgrass Management Practices
Investigator: R.C. Shearman
Status: Revised Hatch project effective June 1, 2001

NEB-21-079 (Plant Pathology) Characterization of Soybean Diseases in Nebraska and Development of Plant Disease Management Strategies in Soybean and Landscape Plants
Investigator: L.J. Giesler
Status: New Hatch project effective April 1, 2001

NEB-32-009 (Director's Office) Soil Science and Forest Health Management Research — Natural Resources Facility
Investigator(s): D.H. Vanderholm and T. Elliott
Status: New USDA/Other Grant effective July 1, 2001

NEB-44-061 (Panhandle Research and Extension Center) Wheat Curl Mite Movement and Wheat Streak Mosaic Virus Spread from Volunteer Wheat
Investigator(s): G.L. Hein, L.J. Young, Q.S. Hu and R.C. French
Status: New State project effective July 1, 2001

Diane says

Illustrate, but don't illustrate the obvious.