ARD News October 2005

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I hope your semester is going well. As you know, Dr. Gary Cunningham has accepted the position of Dean and Director of the Agricultural Research Division starting December 15. He brings a wealth of experience and ability to the University and I know we will all benefit from his leadership. I will continue as Associate Director for a while and look forward to working with you and Dr. Cunningham.

I know the current budget shortfall is of major concern to everyone and there are no easy solutions. Although times are tough with respect to the current budget, we should also take time to appreciate our accomplishments. A quick review of the grants received and submitted listed in this newsletter gives just a brief glimpse of the overall productivity and quality of our research programs.

Some of you have expressed difficulty with some of your grant accounts because the 26% benefits rate for staff, and possibly for post-doctorial research associates, does not always cover the actual benefit costs in some instances. The Office of Sponsored Programs is looking into ways to help resolve the issue. For the short term, if you determine that the established benefits rates will not cover actual benefit costs, you can include actual benefit cost projections in your grant.

Please review the ARD-administered grants and awards programs listed in this issue of the newsletter, share the information with your colleagues, and put relevant application dates on your calendar. Endowment support is an indirect expression of the importance of our work as viewed by friends of the University and is an important part of our success. Let me know how I can help.

Z. B. Mayo
Interim Dean and Director
John and Louise Skala Fellowship
Awarded annually. Fellowships may be awarded to graduate students who have been accepted into either an M.S. or Ph.D. program, and have been offered a graduate assistantship. These funds are to be used to supplement existing assistantships (GRA/GTA) with offers of $3,000 for M.S. and $5,000 for Ph.D. students. Fellowships constitute an award based on academic and scholastic achievement or promise, cannot be associated with any service requirement, and will be awarded only to students doing research in the area of industrial uses of agricultural commodities. Cannot be candidate for Widaman, Milton Mohr, or Farmer's National if a candidate for Skala Award. Industrial Ag Products Center assists in the selection of recipients. Nominations are due about May 10th.

William G. Whitmore Graduate Student Travel Grants
Awarded annually. In accordance with the donor instructions, this program will support attendance to professional society meetings in the field of animal science, agricultural education and leadership, and veterinary and biomedical sciences. Grants under this program are limited to a maximum of $500 per individual per fiscal year. This includes transportation (which is not to exceed coach class fare), registration, lodging, meals, etc. Deadlines for submissions are May 15th and November 15th.

Larrick Graduate Student Travel Grants
Awarded twice yearly. In accordance with the donor instructions, this program supports graduate student travel to professional meetings. In that the Whitmore Graduate Student Travel Grant supports students in animal science, agricultural education and leadership, and veterinary and biomedical sciences, the Larrick Graduate Student Travel Grant program supports graduate student travel in fields other than those listed above. Grants under this program are limited to a maximum of $500 per individual per fiscal year. This amount includes transportation (not to exceed coach class fare), registration, lodging and meals. Deadlines for submissions are May 15th and November 15th.

Williams Endowment
Awarded every two years. Project proposals should relate to the "management of surface water run-off and erosion from agricultural land to achieve total maximum daily loading (TMDL) compliance". The specific focus of the research may be changed in future solicitations as emerging priorities change. Deadline for submission is May 15th in even-numbered years.

Mary and Charles C. Cooper/Emma I. Sharpless Fellowships
Jointly awarded on an annual basis by ARD and CASNR. $1,000 or $2,000 added to stipend of selected graduate students for assistance in recruitment. Applications are accepted throughout the year.

Junior Faculty Excellence in Research Recognition (Ruth E. Branham Endowment)
Awarded annually. Up to two junior faculty recognized per year. Recognition consists of certificate, plaque, and $3,000 for use in research or professional development. Call for nominations is issued on June 1st.

Burlington Northern Water-Science Endowment
Awarded on a bi-annual basis for water science research. Approximately $60,000 is available every two years. RFP is issued about January 15th, awarded in even-numbered years.

Helen Porter Van Spronssen Charitable Trust
The annual income from the Trust is to partially support ($10,000) one GRA in the range and livestock research program. This will be a named assistantship assigned to an approved ARD project in range and livestock research at the Gudmundsen Sandhills Laboratory. Awarded every two years. RFP issued about February 1st, awarded in odd-numbered years.

Ralph H. Bainbridge Memorial Fund
The annual income of approximately $5,000 will be used to partially support research in beef production and grassland management. Grants will be awarded on a competitive basis to interdisciplinary teams. Matching funds will be required. Awarded every two years. RFP issued about February 1st, awarded in odd-numbered years.

Agricultural and Water Research Fund
Interest income will be used in conjunction with the current Burlington Northern Water-Science Endowment to enhance water science and irrigation management research. This is awarded every two years in concurrency with the Burlington Northern Water-Science Endowment. RFP issued about January 15th in even-numbered years.

Jorgensen Fund
The interest income will be used to partially support a GRA for a graduate student conducting research at the Gudmundsen Sandhills Laboratory on beef-range systems. Awarded every two years. RFP issued about February 1st, awarded in odd-numbered years.

Channing B. and Katherine W. Baker Fund
Interest from the endowment is used to support one GRA in the areas of (i) soil conservation and management or (ii) breeding and genetics of food and feed grains. Preference in awarding the GRA will be given to Ph.D. students. Awarded every two years. RFP issued about February 1st, awarded in odd-numbered years.

ARD Discretionary Funds

Multi-state Research Funds
Awarded once each year. Approximately 25 percent of the Hatch Act funds provided to the Nebraska Agricultural Experiment Station (NAES) is set aside to support multi-state research activities. This account is used to provide travel expenses for attendance of official NEAS representatives at meetings that are part of annual meetings of multi-state research projects (NE, NC, S or W), coordinating committees/information exchange groups (NCR, SIEG, etc.), administrative committees (NCA, etc) or proposal development committees.
Hatch Development Research Course Awards Minority Fellowship of Nebraska Foundation Grant Program

Project objectives. Technical support is also provided to official participants in Special Interdisciplinary Research Grants. The Station was set aside in a competitive grants program that addresses specific federal priorities. Requests for proposals are normally issued in April of odd-numbered years and awards are made effective July 1st of that year. The request for proposal specifies the federal priority areas for which applications are sought.

Interdisciplinary Research Grants

Awarded annually depending on availability of funds. Two or three grants awarded for up to two years duration and for up to $20,000 annually. RFP issued about February 1st.

Graduate Student Recruitment Funds

Awarded as requested by departments. Up to two 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.

ESCO/ACOP Leadership Development Course

One faculty member is selected for participation each year. Award consists of tuition and travel expenses associated with ESCO/ACOP Leadership Development Course. Participants spend about 10% of their time serving as administrative interns in ARD. Request for applications is issued in late November and application deadline is late January.

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 1st.

Undergraduate Honors Student Research Program

Awarded annually. Approximately $52,000 awarded each spring to honor students conducting research with a faculty member holding an ARD appointment. Students receive a maximum of $2,500 for supplies and expenses and/or as a stipend. RFP issued about April 1st and September 1st.

UNL-Wide Competitions

Layman Trust Fund Awards

The Layman Awards are aimed at providing seed money for projects that will enhance the grantee's ability to obtain external funding or produce prominent scholarly work. Priority will be given to non-tenured tenure-track faculty and to other eligible faculty who propose projects of high promise and who make a compelling case that Layman funding is critical to their success. Awards may be made for pilot projects, prototype development, faculty development, and preliminary educational and public service programs. Award recipients are expected to actively pursue external funding sources and, where appropriate, submit a proposal for external funding within 18 months of receipt of the award. RFP issued about December with deadline in January - awards issued about May 1st.

University of Nebraska Foundation Grant

The University of Nebraska Foundation grant is for equipment and information technology. The four campuses of the UNL system are eligible to compete for these grants. This program's goal is to strengthen UNL's priority areas through the purchase of needed information technology and equipment, with an emphasis on interdisciplinary collaboration among departments, colleges and other campuses. RFP issued and a letter of intent submitted March 1st to the Vice Chancellor for Research and the proposals by the middle of March to the cognizant Deans.

Willa Cather and Charles Bessey Professorships

These professorships were established to recognize distinguished scholarship and creative activity. Any UNL full professor, regardless of discipline, who does not currently hold another named professorship or chair, is eligible to be nominated or apply. A faculty member may not hold a Cather or Bessey Professorship and another named professorship or chair simultaneously. The professors receive a $2,500 annual stipend. Nominations and applications should be submitted to the Office of Academic Affairs by the middle of October.

Othmer Fellowships

Othmer Fellowships are intended to assist in recruiting exceptional scholars who are seeking a terminal degree (PhD, MFA). Othmer Fellows will receive, in addition to the departmental assistantship, a $7,500 fellowship per year. Othmer Fellowships are renewable for up to three years, given continued excellent progress toward the degree. At the end of the three-year fellowship period, Othmer Fellows are entitled to compete for other fellowship funding. A call will be sent in September.

Chancellor's Doctoral Fellowship

Chancellor's Doctoral Fellowships are designed to assist departments with the recruitment of superior graduate students by adding fellowship funds to an assistantship. These fellowships are for $3,000 and are automatically renewable for a second year, given excellent progress toward the degree. All newly admitted doctoral students are eligible. A call will be sent in September.

Richard H. Larson Graduate Minority Fellowship

Richard H. Larson Minority Fellowships are designed to assist departments with the recruitment of superior graduate students from racial/ethnic groups under-represented in higher education (i.e., African-American, Hispanic or American Indian students) by adding fellowship funds to an assistantship. These fellowships are for $2,500 and are automatically renewable for a second year, given excellent progress toward the degree. Larson fellowships may be offered in combination with other recruiting fellowships (e.g., Othmer or Chancellor's) where applicable. All newly admitted graduate students are eligible. A call will be sent in September.
Student Assistantships in Research and Scholarship (STARS)

The Student Assistantship in Research and Scholarship (STARS) program is designed to assist departments with the recruitment of racially/ethnically under-represented students, or women interested in pursuing graduate studies in disciplines where they are under-represented. The STARS program aids departmental recruitment of superior graduate students by adding a summer assistantship to a regularly funded departmental assistantship. In order for the student to be exempt from summer tuition, the departmental assistantship must be large enough during the academic year to provide summer tuition benefits. These assistantships are for $3,000 and are to be used to support a student during the first summer after matriculation into a full-time program of graduate study (i.e., the summer after the first year of graduate study). A call will be sent in September.

Anyone with questions about these programs is encouraged to contact the Agricultural Research Division office.

New or Revised Projects
July and August 2005

NEB 12-309 Improving efficiency of corn breeding and developing alternative breeding methods
Investigator: Ken Russell, Agronomy and Horticulture
Status: Hatch project effective July 1, 2005 through July 31, 2010

NEB 11-130 Improved prediction and measurement of consumptive water use, soil evaporation, and enhancing water use efficiency of corn and soybean
Investigator: Suat Irmak, Biological Systems Engineering
Status: Hatch project effective Aug. 1, 2005 through July 31, 2010

NEB 10-157 W-1190, Interfacing technological, economic and institutional principles for managing inter-sector mobilization of water
Investigator: Raymond Supalla, Agricultural Economics
Status: Multistate project effective Oct. 1, 2004 through Sept. 30, 2009

NEB 14-139 Use of an eGFP-expressing strain of PRRSV for the study of viral pathogenesis and tropisms
Investigator: Fernando Osorio, Veterinary and Biomedical Sciences
Status: Grant project effective Sept. 1, 2005 through Aug. 31, 2006

NEB 14-138 Functional analysis of bICPO, the major transcriptional regulatory gene of bovine herpesvirus 1 (BHV-1)
Investigator: Clinton Jones, Veterinary and Biomedical Sciences
Status: Grant project effective Sept. 15, 2005 through Sept. 14, 2008

NEB 13-176 Physiological responses of growing calves to stable fly bites
Investigator: Dennis Brink, Animal Science
Status: Hatch project effective Aug. 1, 2005 through Aug. 1, 2010

NEB 11-132 Three-dimensional volume blood flow measurements by ultrasonic feature tracking
Investigator: Gregory Bashford, Biological Systems Engineering
Status: Hatch project effective Sept. 1, 2005 through Aug. 31, 2010

NEB 16-106 Functional consequences of genome evolution in Listeria monocytogenes
Investigator: Andrew Benson, Food Science and Technology
Status: NRI Grant project effective Sept. 15, 2005 through Sept. 14, 2007

Proposals Submitted for Federal Grants
May and June 2005

The following is a listing of proposals that were submitted during July and August 2005 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.

Vadim Gladyshev – Department of Health and Human Services – Functions of mammalian thioredoxin reductases – $250,000

Greg Somerville – American Heart Association – Exploiting staphylococcal metabolism to prevent biofilm associated heart infections – $259,000

Donald Wilhite – USDA-FCIC – Rangeland and forage geospatial decision support system for drought risk management – $323,634

Mark Burbach, Byrav Ramamurthy, and Cody Knutson – USDA-FCIC – An integrated real-time groundwater-level monitoring network to support drought impact assessment and mitigation programs – $380,181

James Alfano – USDA-CSREES – A microarray-based IVET and transposon library analysis of genes active in Pseudomonas syringae pv. Tomato interactions with its host tomato – $352,316

Tom Clemente – NIH – An edible adjuvant expressed in transgenic soybeans – $29,000

James Alfano – USDA-CSREES – Functional genomics of the pathogenic and epiphytic lifestyles of the bacterial plant pathogen pseudomonas syringae – $133,015

Craig Allen – US Geological Survey/BRD – Spatial risk assessment in Nebraska: Risk to native species from non-native invasive species – $25,000
Craig Allen - US Geological Survey/BRD - Impact of white perch on walleye at Branched Oak and Pawnee Reservoirs – $35,000


Craig Allen – US Geological Survey/BRD – Relationship between diversity and invasion on large-scale grassland restorations – $70,439

James Alfano – NSF – Secretion signals and type III chaperones in the Pseudomonas syringae type III secretion system – $427,547


Etsuko Moriyama and Hideaki Moriyama – NSF – Mining and molecular evolution of G-protein coupled receptors in Drosophila and fungal genomes – $203,007


Kenneth Hubbard and Xiaomao Lin – NOAA Climate Data and Detection Program – Improvement and implementation of instrument-change adjustment models for the US historical maximum and minimum temperatures (1950s to 2000s) – $169,829

Donald Wilhite – NOAA Climate Data and Detection Program – Estimating the impacts of complex climatic events: the economic costs of drought in Colorado, Nebraska and New Mexico – $328,970

Joseph Barycki – NSF – Structural insights into redox homeostasis – $866,105

Jaekwon Lee – NSF – Mechanisms of copper ion absorption in mammals – $472,711

Michael Hayes – NOAA Climate and Global Change Program – Transcending the drought impact reporter into an operational system – $453,523

Donald Wilhite – NOAA Climate and Global Change Program – Developing drought monitoring and prediction tool for the Central U.S. – $300,799

Paul Staswick – NSF – The activating role of amino acid conjugation in plant oxylipin signaling – $392,589

Greg Bashord – NSF – Three-dimensional volume blood flow measurement by ultrasonic feature tracking – $400,202


Jaekwon Lee – American Heart Association – Nutritional copper ion transport – $143,000

James Specht – ARS – Genetic mapping and applications of SNP DNA markers in soybean – $41,199

Rich Bischoff and Craig Smith – IES – Strength and resiliency in sustained marriages – $583,870

Martin Dickman and Donald Becker – NSF – The role of proline metabolism during apoptosis and adaptive stress response in fungi – $665,385

Anatoly Gitelson and Donald Rundquist – NASA – MODIS-based monitoring of chlorophyll content in croplands and grasslands: the scientific basis and a prototype product – $394,830

Anatoly Gitelson – NASA – Land cover land use changes effects on surface water quality: Integrated MODIS and SeaWiFS assessment of the Dnieper and Don River basins and their reservoirs – $597,793

Alexander Martin – USDA-ARS – Effect of transgenes from sorghum on the fitness of shattercane X sorghum hybrid – $10,000

Ruma Banerjee – NIH – Nebraska Redox Biology Center – $10,068,285

James Steadman – USDA-AID – Bean/Cowpea CRSP Project – $448,270

Don Wilhite – USDA-SCREES – Drought monitoring, planning and mitigation – $277,778

Lloyd Bullerman and Milford Hanna – USDA-CSREES-Texas Woman’s University – Chemical and Toxicological Evaluation of Fumonisin B1 in Extruded Corn Grits – $90,660


Alan Baquet – USDA – Rural Policy Research Institute (RUPRI) – $85,635


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<th>Grants and Contracts Received for July and August 2005</th>
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### Agricultural Economics:
- Azzeddine Azzam, Konstantinos Giannakas, Jeff Royer, Sandra Scofield, and Amalia Yiannakas - USDA-SERD: $128,000.00

### Agricultural Research and Development Center:
- Miscellaneous Grants under $10,000 each: $10,000.00

### Agronomy and Horticulture:
- Steve Baenziger, Mary Shipman, and David Baltensperger - Nebraska Wheat Board: $70,000.00
- Kenneth Cassman - Fuermann Foundation: $52,200.00
- Richard Ferguson and Charles Shapiro - Georgia-Pacific Corporation: $19,499.00
- Alexander Martin - USDA-ARS: $10,000.00
- Lena Nelson - Nebraska Wheat Board: $12,000.00
- Mary Shipman, Steve Baenziger, David Baltensperger, and Robert Graybosch - Nebraska Wheat Board: $45,000.00
- James Specht - United Soybean Board: $50,000.00
- James Specht - USDA-ARS: $41,199.00
- Charles Wortmann - Charles & Katherine Baker Endowment: $12,000.00
- Miscellaneous Grants under $10,000 each: $96,683.00

### Animal Science:
- Dennis Brink - USDA-ARS: $35,000.00
- Chris Calkins and Susan Cappett - National Cattlemen's Beef Association: $50,988.00
- Chris Calkins - Nebraska Beef Council: $44,994.00
- Chris Calkins - National Cattlemen's Beef Association: $46,166.00
- Chris Calkins - Nebraska Beef Council: $43,928.00
- Galen Erickson - ELANCO: $24,000.00
- Rodger Johnson - USDA: $49,382.00
- Steven Jones - National Pork Board: $31,350.00
- Terry Klopfenstein and David Smith - Nebraska Beef Council: $50,000.00
- Sheila Scheidler - Finneeds International Ltd.: $30,000.00
- Miscellaneous Grants under $10,000 each: $4,420.00

### Biochemistry:
- Ruma Banerjee - NIH: $2,120,429.00
- Ruma Banerjee - American Heart Association: $25,000.00
- Donald Becker - National Institute of General Medical Sciences: $216,875.00
- Vadim Gladyshev - NIH: $40,320.00

### Biological Systems Engineering:
- Jayamkondan Subbiah and Chris Calkins - Nebraska Beef Council: $28,428.00

### Center for Applied Rural Innovation (CARI):
- Alan Baquet - USDA: $85,635.00
- Alan Baquet - USDA: $87,018.00

### Entomology:
- Blair Siegfried - NSF: $19,500.00
- Miscellaneous Grants under $10,000 each: $14,250.00

### Food Science and Technology:
- Andrew Benson - Biobalance Corporation: $79,354.00
- Andrew Benson - NRI: $261,515.00
- Susan Hefle - USDA: $146,506.00
- Steve Taylor, Robert Hulkin, Andrew Benson, Lloyd Bullerman, and Susan Hefle - USDA-SERD: $138,000.00
- Steve Taylor - USDA-CSREES: $488,921.00
- Miscellaneous Grants under $10,000 each: $38,020.00

### Northeast Research and Extension Center:
- Miscellaneous Grants under $10,000 each: $92,850.00

### Panhandle Research and Extension Center:
- Bob Harveson - Anna Elliott Grant: $13,000.00
- Gary Heim - Nebraska Wheat Board: $15,000.00
- Gary Heim and Robert Wilson - Nebraska Department of Agriculture: $24,000.00
- Gary Hertgen - Anna Elliott Grant: $15,000.00
- Charles Hilberry - Nebraska Dry Bean Commission: $24,000.00
- Robert Wilson and Gary Heim - Nebraska Department of Agriculture: $10,118.00
- Miscellaneous Grants under $10,000 each: $159,732.00

### Plant Pathology:
- Loren Giesler - Iowa State University: $25,189.00
- James Steadman - USDA-ARS: $52,500.00
- James Steadman - USDA-AID: $80,022.00
- John Watkins - Nebraska Wheat Board: $22,500.00
- Miscellaneous Grants under $10,000 each: $38,250.00

### School of Natural Resources:
- Jennifer Chaky - Nebraska Department of Agriculture: $12,000.00
- Anatoly Gitelson - North American Lake Management Society: $24,661.00
- David Gosselin - NHSS: $31,500.00
- Mark Kuzila - Nebraska Department of Natural Resources: $143,051.00
- Susan Lackey - Lower Elkhorn NRD: $46,000.00
- James Merchant and Chris Chalmers - Nebraska Department of Health and Human Services: $179,201.00
- James Merchant, Milda Valiunas, and Don Rundquist - American View, Inc.: $89,500.00
- Larkin A. Powell - The Platte River Whooping Crane Maintenance Trust: $25,000.00
- Don Rundquist, Chad Boshart, and Jared Burkholler - Nebraska Department of Agriculture: $24,372.00
- James Swinchart - USGS: $94,881.00
- David Wedin and Kimberly Payne - US EPA: $10,150.00
- Miscellaneous Grants under $10,000 each: $15,000.00

### Statistics:
- Kent Eskridge - Nebraska Department of Health & Human Services: $27,885.00
- Kent Eskridge - Nebraska Department of Health & Human Services: $11,845.00

### Textiles, Clothing and Design:
- Yiqi Yang - Nebraska Wheat Board: $31,810.00

### Veterinary and Biomedical Sciences:
- Jeff Cirillo - NIH: $57,144.00
- Clinton Jones and Yang Zhang - NRI: $342,000.00
- Maryjorie Lou - NIH: $434,840.00
- Rodney A. Moolay - NRI: $270,000.00

### Water Center:
- Kyle Hoagland - Nebraska Department of Natural Resources: $500,000.00
- Kyle Hoagland - Nebraska Department of Natural Resources: $1,000,000.00

### West Central Research and Extension Center:
- Don Adams - Helen Porter Van Sprott Charitable Trust: $10,000.00
- Miscellaneous Grants under $10,000 each: $35,300.00

### Miscellaneous Grants under $10,000 each:
- $5,752,981.00