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Agricultural Research Division News

December 2005

Volume 38, Number 6

Comments from the Interim Dean


Dear Colleagues:

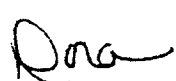
As you look through this and previous newsletters, I hope you are as impressed as I am with the continued success and growth of our research programs. Our grants and contracts in FY 2005 were up over \$2 million, compared with FY 2004, and our research outputs (i.e., publications, books, M.S. and Ph.D. graduates, cultivars, patents, etc.) were up over 30%. Based on what the faculty has accomplished in the first half of FY 2006, I expect our productivity will be even higher than last year. Based on the quality of the work you are doing, there really is no place like Nebraska.


At this time of the year, it is always good to reflect on the past year, celebrate our successes, remember important events and individuals, and resolve to do new and even better things in the future. From all of us in the Agricultural Research Division office, I want to express our appreciation for your help, contributions, and dedication to serving science and society, and improving the quality of life for the citizens we serve. It has been a pleasure to serve you as the Interim Dean of the Agricultural Research Division and I look forward to continuing to help you and Dean Cunningham move our research accomplishments to even higher levels of success.


From all of us in the ARD office, we congratulate you on a great 2005 and look forward to continuing to help you succeed in 2006!

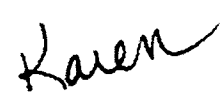
The ARD Office Staff:


Bob May


Dana


Richard Ferguson


Melvin


Karen

William G. Whitmore Student Travel Endowment

The William G. Whitmore memorial fund was established at the University of Nebraska Foundation in 1980 as a memorial to William G. Whitmore, a member of the Board of Regents at the University of Nebraska from 1902-1916. The income from the fund supports a travel grant program for graduate students within IANR whose advisor or co-advisor has an ARD research appointment. In accordance with the donor instructions, this program will support attendance to professional society meetings in the fields of animal science, agricultural education and leadership, and veterinary and biomedical sciences. Priority for grants will be given to graduate students who are personally presenting the results of their research and/or scholarly investigations.

The Whitmore Research Travel Committee makes grants for expenses, including transportation (which is not to exceed coach class airfare), registration, lodging, meals, etc. Grants under this program are limited to a maximum of \$500 per individual per fiscal year. The following IANR students received William G. Whitmore memorial funds for travel during the period Jan. 1 through June 31, 2006:

Name: Robin Ten Broeck
Department: Animal Science Department
Meeting: American Society of Animal Science
Place: Des Moines, Iowa

Name: Michelle Baltus
Department: Animal Science Department
Meeting: American Society of Animal Science
Place: Des Moines, Iowa

Name: Jeremy L. Martin
Department: Animal Science Department
Meeting: American Society of Animal Science
Place: Des Moines, Iowa

Name: Matt Luebbe
Department: Animal Science Department
Meeting: American Society of Animal Science
Place: Des Moines, Iowa

Name: Grant I. Crawford
Department: Animal Science Department
Meeting: American Society of Animal Science
Place: Des Moines, Iowa

The next call for these travel funds will be sent to the unit administrators around the second week in April 2006 for travel from July 1 to Dec. 31, 2006.

David H. and Annie E. Larrick Fund, 2006

The David H. and Annie E. Larrick fund supports travel of graduate students who are conducting research in fields other than animal science, agricultural education and leadership, and veterinary and biomedical sciences. The Larrick endowment will assist the following students with \$500 for travel grants to present research findings at national or regional meetings.

Name: Neal Bryan
Department: Agronomy and Horticulture
Meeting: Society for Range Management
Place: Vancouver, BC - Canada

Name: Sadaf Khan
Department: Biochemistry Department
Meeting: Keynote Symposium - Plant Responses
Place: Copper Mountain, Colorado

Name: David M. Guderian, Jr.
Department: Nutrition and Health Sciences
Meeting: American Society for Nutrition
Place: San Francisco, California

Name: Gabriela Comporeale
Department: Nutrition and Health Sciences
Meeting: American Society for Nutrition
Place: San Francisco, California

Name: Yap Ching Chew
Department: Nutrition and Health Sciences
Meeting: American Society for Nutrition
Place: San Francisco, California

Name: Young-Nam Kim
Department: Nutrition and Health Sciences
Meeting: American Society for Nutrition
Place: San Francisco, California

UNDERGRADUATE HONORS RESEARCH PROGRAM

Funds for the FY 2005-2006 Undergraduate Honors Student Research Program have been allocated to units for support of undergraduate student research projects. This program is open to junior and senior University Honors Program students proposing to work with a faculty research mentor who has an ARD appointment. Three proposals were received and they were all funded. The following students have received funding:

Gwenn Skar (Biological Systems Engineering) \$2,500
Mentor: Dr. Greg Bashford
"Dental Enamel Thickness Measurement Using Ultrasound"

Abby Luettel (Biological Systems Engineering) \$2,500
Mentor: Dr. Greg Bashford
"Bioacoustic Properties of Three-Dimensional Anthropomorphic Breast Phantoms"

Ross Havlat (Biological Systems Engineering) \$2,500
Mentor: Dr. Dean Eisenhauer
"Installation Requirements for Metering Irrigation Water"

New or Revised Projects September and October 2005

NEB 11-131 A national learning center for animal agricultural water quality
Investigator: Rick Koelsch, Biological Systems Engineering
Status: Grant project effective Sept. 15, 2005, through Sept. 14, 2009

NEB 42-031 Improving organic farming systems across Nebraska agroecoregions
Investigator: Charles Shapiro, Northeast Research and Extension Center
Status: Grant project effective Sept. 15, 2005, through Sept. 14, 2009

Proposals Submitted for Federal Grants September and October 2005

The following is a listing of proposals that were submitted during September and October 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.

Ronald Cerny and Arts and Sciences Department – USDA-ARS – Proteomic analysis in domestic livestock – \$114,000
James Alfano – BARD – Elucidating the functions of type III effectors from necrogenic and tumorigenic bacterial pathogens – \$360,000
Scott Hygnstrom – USDA APHIS – Toward the Development of Spatially Explicit Models of Wildlife Disease – \$92,000
Konstantinos Giannakas – USDA/Economic Research Service – The Market and Welfare Effects of Country-Of-Origin-Labeling (COOL) for Specialty Crops – \$10,000
Vadim Gladyshev – NIH – Functions of mammalian thioredoxin reductases – \$1,800,530
Donald F. Becker and Stephen W. Ragsdale – NSF – Redox Biology Training REU Site – \$180,000
Rick Koelsch and the University of Wisconsin-Madison – USDA/CSREES – Partnerships for Agricultural Environmental Management Assessment Systems (collaboration with University of Wisconsin) – \$9,630
Shashi B. Verma – U.S. Department of Energy – Carbon sequestration in dryland and irrigated agroecosystems quantification at different scales for improved prediction – \$300,000

Shashi B. Verma, Derrel L. Martin, Raymond J. Supalla, and Jeffrey S. Peake – NSF-EPSCoR – Integration of Field Measurements and Modeling for Improved Management of Water Resources – \$1,500,000

Marjorie Lou, Lawrence Harshman, and Janos Zempleni – NSF EPSCoR – Regulation of Lifespan and Senescence in Eukaryotes – \$2,000,000

Patrick H. Dussault, Kenneth Nickerson, Vicki Schlegel, Liangcheng Du, and J. Schafer – NSF EPSCoR – Chemical and Biochemical Profiling of Microorganismal Phenotype – \$2,066,935

Curt Weller – USDA/ARS – Development of sorghum lipids as nutraceuticals – \$28,800

Marjorie Lou, Lawrence Harshman, and Janos Zempleni – NSF EPSCoR – Regulation of lifespan and senescence in Eukaryotes – \$2,000,000

Suat Irmak and Derrel L. Martin – USDA-NRCS – Consumptive Water Use and Crop Water Use Efficiency of Subsurface Drip-Irrigated Corn Coupled with Different Tillage Practices in South Central Nebraska – \$70,000

Clinton Jones and Anisa Angeletti – NIH – Analysis of small RNAs encoded by the HSV-1 LAT gene – \$1,825,000

Steve Goddard and Donald Wilhite – USDA – Drought risk, impact, and mitigation information system – \$6,407,472

Steven Harris – NSF – Autophagy in fungal hyphae: functional genomic and mechanical strength studies – \$417,852

David Steffen – USDA – Classical swine fever surveillance – \$76,175

Greg Bashford – NIH – Ultrasound feature tracking for blood flow and tissue motion detection – \$505,000

Dicky Dee Griffin – USDA – Stimulating the development of veterinarians to serve rural America – \$124,810

Marjorie Lou – NIH – Redox regulating of growth factor signaling in the lens – \$322,000

Dennis Brink – USDA – Physiological response of cattle to stable fly bites – \$30,000

James Van Etten – NIH – Engineering DNA Nicking endonucleases – \$150,000

Tom Clemente – USDA-ARS – Investigating the sorgoleone biosynthetic pathway in genetically-transformed sorghum – \$103,370

Janos Zempleni – NIH – Mechanisms of biotin homeostasis – \$1,022,000

John Yohe – U.S. AID – International Sorghum/millet research support program – \$300,000

Rhae Drijber – USDA-ARS-SCA – Developing technologies to improve soil & nutrient management – \$74,000

John Foster – USDA-ARS – Developing transgenic methods for use in studying screwworm genetics – \$30,000

James Van Etten and the University of California – NIH – Center for innovation in membrane protein production – \$144,293

David Marx – NIH-Department of Health and Human Services – Sex differences in 3D mechanics of healthy and degenerative TMJs – \$34,384

Craig Allen, Andrew Tyre, and Qi Steven Hu – EPA – Interactions between climate change and multiple stressors: predicting nonlinear changes in amphibian and aquatic macroinvertebrate assemblages – \$401,346

Alexander Martin – CSREES-NRI – IWM implementation – \$41,595

Greg Somerville and Paul Fey – NIH-Department of Health and Human Services – Environmental regulation of staphylococcus epidermidis PIA Synthesis – \$274,000

Donald Becker – NIH – Mechanistic studies of functional switching in the PutA flavorprotein – \$1,220,349

Gary Hein, Stephen Wegulo, Qi Steven Hu, and Donald Rundquist – CSREES-N C IPM – Predicting wheat curl mite movement and wheat streak mosaic virus spread – \$99,470

Marcela Raffaelli, Gustavo Carlo, Cody Hollist, and Brian Wilcox – NIH – Developmental trajectories of brasilian street youth – \$1,435,009

Andrew Benson – NIH – Functional consequences of genome evolution in E.coli O157:H7 – \$1,948,575

Jaekwon Lee – NIH – Copper transport, homeostasis, and its defect – \$1,434,240

Grants and Contracts Received for September and October 2005

Agricultural Economics:

Konstantinos Giannakas – USDA/Economic Research Service \$10,000.00

Agricultural Research and Development Center:

Daniel Duncan – Barta Brothers Fund \$10,000.00
Daniel Duncan – Barta Brothers Fund \$15,000.00

Agronomy and Horticulture:

Ken Cassman, Haishun Yang, Achim Dobermann, Dan Walters, and Richard Ferguson – Nebraska Corn Board \$25,504.00
Ismail Dweikat – Nebraska Grain Sorghum \$13,500.00
George Graef – United Soybean Board \$67,605.00
Roy Spalding – Central Platte Natural Resources District \$30,000.00
 Miscellaneous Grants under \$10,000 each \$62,623.00

Animal Science:

Dennis Brink – USDA-ARS \$30,000.00
Terry Klopfenstein and Don Adams – Nebraska Corn Board \$20,343.00
 Miscellaneous Grants under \$10,000 each \$4,750.00

Biochemistry:

Melanie Simpson – NIH \$36,327.00

Biological Systems Engineering:

David Billesbach – U.S. Department of Energy \$63,552.00
Dean Eisenhauer – Nebraska Department of Environmental Quality \$10,000.00
Thomas Franti – Charles and Katherine Baker Fund \$12,000.00
Suat Irmak and Derrel L. Martin – USDA-NRCS \$70,000.00
Rick Koelsch and the University of Wisconsin-Madison – USDA-CSREES \$9,630.00
Curt Weller – USDA-ARS \$28,800.00

Entomology:

Miscellaneous Grants under \$10,000 each \$38,560.00

Food Processing Center:

Steve Taylor – USDA FSMIP \$43,000.00

Food Science and Technology:

Miscellaneous Grants under \$10,000 each \$11,085.00

Northeast Research and Extension Center:

Terry L. Mader and Galen Erickson – Nebraska Corn Board \$24,645.00
Charles Shapiro, David Baltensperger, James Brandle, Charles Francis, Stevan Knezevic, Robert Wright, and Ron Johnson – USDA-CSREES \$762,949.00
 Miscellaneous Grants under \$10,000 each \$22,900.00

Panhandle Research and Extension Center:

Carlos Urrea – Nebraska Dry Bean Commission \$13,000.00
 Miscellaneous Grants under \$10,000 each \$74,300.00

Plant Pathology:

Loren Giesler – North Central Soybean Research Program \$20,000.00
Loren Giesler – USDA-ARS \$20,000.00
 Miscellaneous Grants under \$10,000 each \$14,000.00

School of Natural Resources:

Craig Allen – U.S. Geological Survey-BRD \$23,000.00
Craig Allen – U.S. Geological Survey-BRD \$25,000.00
Craig Allen – U.S. Geological Survey-BRD \$35,000.00
Anatoly Gitelson – NASA \$24,000.00
Kyle Hoagland – National Park Service \$10,000.00
Kyle Hoagland – USGS National Institute of Water Resources \$62,728.00
Kyle Hoagland – Nebraska Department of Environmental Quality \$150,000.00
Scott Hygnstrom – USDA APHIS \$92,000.00
Robert Kuzelka – U.S. Environmental Protection Agency \$15,000.00
Susan Lackey – Upper Elkhorn Natural Resources District \$31,000.00
Don Rundquist – CUNY-City University of New York \$81,250.00
Shashi Verma – U.S. Department of Energy \$300,000.00
Shashi Verma – U.S. Department of Energy \$1,268,660.00
Don Wilhite – USDA-CSREES \$277,778.00

Statistics:

Erin Blankenship and Walter Stroup – Boehringer Ingelheim Pharmaceuticals \$30,228.00

US Meat Animal Research Center:

Z B Mayo – USDA-ARS-NPA \$946,600.00

Veterinary and Biomedical Sciences:

Gerald E. Duhamel – Morris Animal Foundation \$15,422.00
Clinton Jones – Fort Dodge Animal Health \$58,612.00
Fernando Osorio and Asit Pattnaik – NRI \$129,600.00
David Steffen – Nebraska Department of Agriculture \$53,000.00
 Miscellaneous Grants under \$10,000 each \$2,400.00

West Central Research and Extension Center:

Miscellaneous Grants under \$10,000 each \$17,320.00

TOTAL \$5,212,671.00

Fall 2005 Graduate Census

Graduate student data represents students enrolled on the sixth-day census (Fall 2005) and non-enrolled students actively pursuing graduate degrees. The graduate program in the Agricultural Research Division (College of Agricultural Sciences and Natural Resources and the College of Education and Human Sciences) increased 2% from Semester 2004 to the Fall Semester 2005. 19.8% of the graduate students in CASNR majors are supported by assistantships (state-appropriated GRA and GTA; fellowships; and international agency or foreign country support). 19.5% of the students in the College of Education and Human Sciences are supported. 34% of our students were not enrolled in IANR graduate programs on the sixth day of the semester.

Institute of Agriculture and Natural Resources

Major/Unit	M.S.				Ph.D.				2005	2004	2003	2002	2001	04-05% Chg.
	GRA	GTA	Other	Self	GRA	GTA	Other	Self						
College of Agricultural Sciences and Natural Resources														
Agricultural Economics	8	0	5	6	3	0	4	5	31	33	36	35.5	37	-6.1%
Ag. Leadership, Education & Comm.	3.5	3	4	55	0	2	0	20	87.5	82	86.5	84	63	6.7%
Agronomy	4	1	11.5	14.5	7	0	21	7.5	66.5	69	80.5	75	82.5	-3.6%
Animal Science	9	1	18.5	7.5	11.5	0	5	11.5	64	62.5	72.5	79	85.5	2.4%
Biochemistry	0	0.5	0.5	0	4	2.5	30	0	37.5	36	31	33	36	4.2%
Biological Systems Engineering	4	0	10	6	0	0	10	0	30	20	26	21	30	50.0%
Entomology	1.5	1	12	89.5	2	0	11.5	4	121.5	116	108	94	95	4.7%
Food Science and Technology	2.5	0	3	8	4.5	0	6	2	26	33.5	33	41	43.5	-22.4%
Horticulture	3	1	1	2	0	0	1	2	10	12.5	14	15.5	12	-20.0%
Master of Agriculture	0	0	0	32	NA	NA	NA	NA	32	23	8	10	NA	39.1%
Mechanized Systems Management	0	1	2	0	NA	NA	NA	NA	3	3	4	6	5	0.0%
Plant Pathology	0	0	0	3.5	6	0	4.5	0	14	16	16	12	9	-12.5%
School of Natural Resources (M.A./M.S.)	4.5	0.5	25.5	17.5	5.5	1	11.5	7.5	73.5	72.5	73	88	57.5	1.4%
Statistics	2.5	9.8	5.3	10	0	3	6	3	39.5	43	37.5	30.5	15	-8.1%
Veterinary and Biomedical Sciences	0	2	0	6	15	0.5	1	0	24.5	26	30	31.5	40	-5.8%
Total	42.5	20.75	98.25	257.5	58.5	9	111.5	62.5	660.5	632	656	656	611	4.5%
Grand Total			419				242.5		660.5	632	656	656	611	4.5%
College of Education and Human Sciences														
Family and Consumer Sciences	8	1	6	52	NA	NA	NA	NA	67	70	42	43	36	-4.3%
Nutrition and Health Sciences	3	4	7	19	NA	NA	NA	NA	33	44	28	39	36	-25.0%
Textiles, Clothing and Design (M.A. /M.S.)	5.5	1	2.5	17	NA	NA	NA	NA	26	32	25	26	23	-18.8%
Interdepartmental Nutrition	0	2	0	1	3	0	5	9	20	6	16	15	12	233.3%
HUMS (FACS, NUTR, TXCD) (Ph.D.)	NA	NA	NA	NA	3.5	3	5	16	27.5	34	30	34	52	-19.1%
Total	16.5	8	15.5	89	6.5	3	10	25	173.5	186	141	157	159	-6.7%
Grand Total			129				44.5		173.5	186	141	157	159	-6.7%
Grand Total CASNR & CEHS	59	28.75	113.75	346.50	65	12	121.5	87.5	834.0	818	797	813	770	2.0%