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ARD

Agricultural Research Division News

Office of the Dean, 207 Ag Hall, P.O. Box 830704, Lincoln, NE 68583-0704, Phone (402) 472-2045, FAX (402) 472-9071

February 2001

Volume 35, Number 3

Comments from the Dean

Dear Colleagues:

The Omaha World Herald series dealing with the status of UNL, which began running in its Jan. 8, 2001 edition, was not flattering to IANR or the Agricultural Research Division. Although many attempts were made to provide correct information to the authors of this series, very selective data (sometimes incorrect) were included in the articles. The assertion that UNL is not doing as well as our peers in obtaining external funding for research is correct, but the article fails to mention that in FY 2000 ARD faculty received 47.5 percent of all research funds administered by UNL Research Grants and Contracts. If the Conservation and Survey Division is included, IANR faculty obtained more than 59 percent of all research funds received by UNL during FY 2000.

As compared to our other eight peer institutions with agricultural experiment stations, ARD ranks 8th, 1st, 4th, 4th, and 3rd in USDA formula funds, CSREES grants and contracts, other USDA funds, other federal agency funds and state appropriations, respectively. We rank 3rd in total expenditures for research when including our Nebraska Research Initiative expenditures and 6th when expressing state appropriations as a percent of total expenditures. When expressed as a proportion of the farm-gate value of crops and livestock produced in Nebraska, state appropriations for agricultural research are lower than most of the other peer agricultural experiment stations. Based on these data, I believe that ARD faculty are doing an excellent job of leveraging appropriated resources with grant and contract funds, and I do not agree that ARD receives too great a proportion of state resources compared with the funding patterns in other agricultural experiment stations.

The World Herald article was also critical that more of the technologies developed by ARD faculty were not sold to the highest bidder, commercialized by large agribusiness companies and the resultant products sold to Nebraska producers. As you know, much of the knowledge generated by our scientists is freely available to anyone and is the basis for educational programs carried out by Cooperative Extension and disseminated through

formal classroom instruction. A very limited number of outputs from our research program are commercialized by private companies. In general, these are products that can only be commercialized by an exclusive licensing agreement because of the structure of the industry. Examples of such products are turfgrass varieties, ornamental plant cultivars, specialty food-grade soybean varieties destined for export to Japan and feed manufacturing technologies. I continue to believe that since Nebraska citizens have provided significant amounts of funds to carry out research, most of our new knowledge should be retained in the public sector. However, certain technologies are only useful when commercialized and these should be licensed to the private sector.

It is interesting that the Omaha World Herald suggested that agriculture has been declining in importance since 1980. The farm-gate value of livestock and crops in the state has increased from \$6 billion in 1980 to \$9 billion in 1999, and the total production of corn, soybeans, dry edible beans, cattle, milk, eggs and other commodities has increased significantly during the past 20 years. The article said that CASNR enrollment has decreased by 7.2 percent since 1980 but failed to acknowledge that UNL enrollment has dropped by a greater proportion — 7.7 percent. The claim that IANR's budget as a proportion of the UNL budget has increased since 1980 is incorrect. Data from NU Central Administration confirms that the budget for IANR as a percentage of the UNL budget has decreased from 31.6 percent in 1980 to 30.3 percent in 2000 even though the temporary *E. coli* 0157:H7 project funds are included in the IANR total as are funds for Extension Educator salaries formerly paid by counties.

Although the ARD can improve its service to Nebraska and can be a more significant player in fundamental research at the national level, I believe that we have a strong research program that is receiving respect and recognition by our peers. Our research programs are focused on important issues and the quality of our research is high. There is always room for improvement but overall we are performing in an excellent manner regardless of the opinions of the Omaha World Herald.

Darrell W. Nelson
Dean and Director



State Agricultural Experiment Stations National Research Priorities 2005-2010

At the 1999 and 2000 annual national meetings of the State Agricultural Experiment Station Directors, workshop sessions were conducted to identify and reach consensus on the highest national research priorities for future research activities. A summary of the outcome of that process for 2000 has recently been distributed to the states. It must be emphasized that this list is intended to identify priorities for future increased public funding. It does not identify the current highest priority research areas at the national level, nor does it identify the highest priorities for the individual states.

Recent experiences in attempting to communicate with the U.S. Congress about the need for increased funding for agricultural research has made it clear that any fund increases will have to be identified and justified by the specific program needs for which they will be used. Congress is not receptive to increased funding with no idea how the funding is going to be targeted.

In the following priority list, the statement below each area (in italics) represents the primary outcome-oriented goal desired from research in that area. The unprioritized bullet list under each area indicates programs of critical national need within each high priority area.

1. Environment, Natural Resources and Landscape Stewardship

Natural resources will be managed to improve the environment and the economy.

- Water: ecosystems/watershed management, quality and quantity
- Land: use, management and preservation
- Biodiversity
- Risk assessment

2. Relationship of Food to Human Health

Food will always contribute to human health.

- Human health impacts of food, diet, and environment
- Assuring safe food throughout the food value chain
- Nutraceuticals and functional foods

3. Rural Community Vitality

Agricultural science will help rural communities thrive.

- Human capital development
- Access to and application of new technologies
- Risks facing rural people
- Competitiveness of commodity-based and product-based enterprises

4. Biobased Products

Biobased products will be central to sustaining the economy and the environment.

- Biofuels and biobased materials
- Genetic enhancement and preservation
- Nutraceuticals and functional foods
- Social, economic and environmental dimensions of technological change

5. Functional Genomics and Bioinformatics

Genomic science will help assure global health and well-being.

- Genetically enhanced plants, animals, and microorganisms
- Improved techniques to advance genomic science
- Safety, risk assessment and consumer use

We hope that unified support for increased funding for these priorities will be shown by the Agricultural Experiment Stations nationwide and also will be supported by the various advocacy groups who support enhanced public funding for agricultural research.

The IANR and CHRFS priorities identified as part of the UNL Prioritization Process relate well to these national priorities. This suggests that priorities developed through two separate processes come to the same conclusion; thus, adding credibility to the priority listing.

Importance of World Trade to Agricultural Profitability*

In 1998, U.S. agricultural exports totaled \$5.3 billion. About one-quarter of U.S. agricultural production is shipped overseas. According to the Economic Research Service, each export dollar creates another \$1.28 in supporting activities to process, package, ship and finance products. This suggests that agricultural exports generated \$122 billion in total economic activity in 1998.

Agricultural exports currently support three-quarters of a million American jobs. These jobs pay higher than average wages and are distributed among a wide range of communities and professions, both on and off the farm, in rural and urban communities. One-third of these jobs are in rural areas, many of which rely on agriculture and related industries as their primary employer and major source of economic growth. No other industry contributes a greater share of its export benefits to rural America.

Nebraska is one of the leading producers of agricultural products and a major exporter. The state's farm cash receipts totaled \$8.8 billion in 1998. The same year, Nebraska ranked fifth among all 50 states with agricultural exports estimated at \$2.9 billion. These exports help boost farm prices and income while supporting about 44,000 jobs both on and off the farm in food processing, transportation and manufacturing. Exports are increasingly important to Nebraska's agricultural and state-wide economy. Measured as exports divided by farm cash receipts, the state's reliance on agricultural exports has risen from 24 percent to 33 percent since 1991. Nebraska's top five exports are live animals and red meats, feed grains and products, soybeans and products, feeds and fodders, and animal hides and skins.

* Information taken from Fact Sheets provided by the USDA Foreign Agricultural Service dated October and November 1999.

University of Nebraska-Lincoln Priorities

The first draft of the UNL Campus Priorities document has been released by Chancellor Periman and can be examined at the following web site:

<http://www.unl.edu/svcaa/prioritization.html>

The listing of IANR priorities has been revised following the "brown bag" sessions held in December to obtain faculty input and discussions with the Dean of the College of Arts and Sciences. Listed below are the IANR priorities as of January 29, 2001:

- Agriculture and Community Development Program
- Service Learning Program
- Food Safety Program
- Water Resources Conservation and Protection Program
- Ecosystem Science Program
- Value-added Processing of Agricultural Commodities Program
- Bioinformatics Program
- Functional Genomics Program
- Biotechnology and Molecular Biology Program

IANR is also involved with several of the priorities identified by the College of Human Resources and Family Sciences and some general priorities in the UNL document, such as globalization, distance education and undergraduate education. The Bioinformatics and Functional Genomics priorities are joint with the College of Arts and Sciences. We anticipate that as the UNL document is finalized, several other IANR priorities will be combined with the College of Arts and Sciences and other colleges.

IANR priorities cover about 30 percent of our programs. The priorities listed are those that we believe need enhancement to address the needs of stakeholders as identified in the strategic planning process or to address the issues raised in the 2020 Vision, Life Science Task Force and Extension in the 21st Century reports. Listed as a priority does not indicate that these program areas are more important than other program areas not listed. The listing suggests that IANR desires to enhance these program areas through acquisition of new resources.

Anna Elliott Proposals

Two proposals were granted second-year funding from the Anna H. Elliott Fund. This 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 with preference to plant science in western Nebraska. Proposals were funded as follows:

Jerry Volesky (West Central Research and Extension Center), Walter H. Schacht (Agronomy and Horticulture), Patrick Reece (Panhandle Research and Extension Center)

"Effects of Spring Grazing on Utilization of Key Forage Species on Upland Sandhills Range"

Total Funded: \$ 9,500
Funding Period: Jan. 1, 2001 - Dec. 31, 2001

Steve Mason (Agronomy and Horticulture), Drew Lyon (Panhandle Research and Extension Center)

"Pearl Millet as a Grain Crop for Western Nebraska"

Total Funded: \$15,000
Funding Period: Jan. 1, 2001 - Dec. 31, 2001

Undergraduate Honors Research Program

Funds for the FY 2001 Undergraduate Honors Student Research Program have been allocated to units to support 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. Two proposals were received and funded. The students who received funding are:

Jeffrey E. Nicolaisen (Biological Systems Engineering) \$2,500

Researcher: Dr. John Gilley
"Phosphorus and Nitrogen in Runoff as Affected by Crop Residue"

Dana Novak (Biochemistry Department) \$2,500

Researcher: Dr. Gautam Sarath
"Localization Studies on a Soybean Acid Phosphatase in Yeast"



Grants and Contracts Received December 2000 and January 2001

Agronomy/Horticulture	
Miscellaneous grants under \$10,000 each	\$106,466
Animal Science	
Calkins, Chris — National Cattleman's Beef Association	38,050
Miscellaneous grants under \$10,000 each	39,876
Entomology	
Miscellaneous grants under \$10,000 each	39,000
Food Science and Technology	
Meagher, Michael — Anonymous	103,049
Miscellaneous grants under \$10,000 each	61,758
Northeast Research and Extension Center	
Miscellaneous grants under \$10,000 each	3,600
Panhandle Research and Extension Center	
Miscellaneous grants under \$10,000 each	22,900
Plant Pathology	
Miscellaneous grants under \$10,000 each	6,074
South Central Research and Extension Center	
Miscellaneous grants under \$10,000 each	7,800
West Central Research and Extension Center	
Miscellaneous grants under \$10,000 each	6,417
Veterinary and Biomedical Sciences	
Miscellaneous grants under \$10,000 each	9,666
GRAND TOTAL	\$444,656

New or Revised Projects

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

NEB-10-144 (Agricultural Economics) Social Capital: Enhancing Measurement, While Also Contributing to Improved Understanding and Policy

Investigator(s): S.M. Cordes, G.D. Lynne, J.C. Allen and J.F. Royer

Status: New Competitive Grant effective Aug. 1, 2000

NEB-12-194 (Agronomy) Novel Methods for Soybean Genetic Improvement and Genomic Analysis

Investigator: J.E. Specht

Status: New Hatch project effective Dec. 1, 2000

NEB-12-252 (Agronomy) Biosolids Application and Soil Chemical Properties: Changes in Phosphorus and Carbon Pools

Investigator: D.L. McCallister

Status: New Hatch project effective March 1, 2001

NEB-12-279 (Agronomy) The Genetic Basis of Agronomic Traits Controlled by Chromosome 3A in Wheat

Investigator(s): P.S. Baenziger, K. Gill, D. Nettleton and K. Eskridge

Status: New Competitive Grant effective July 31, 2000

NEB-12-280 (Agronomy) Spatial Distribution of Weed Patches: The Influence of Habitat Heterogeneity

Investigator: D.A. Mortensen

Status: New Competitive Grant effective Aug. 15, 2000

NEB-12-281 (Agronomy) Enhancing Crop Diversity by Understanding Genotype by Environment Interactions

Investigator: L.A. Nelson

Status: New Hatch project effective Jan. 1, 2001

NEB-14-110 (Veterinary and Biomedical Sciences) Inhibition of Apoptosis by the Bovine Herpesvirus 1 Latency Related Gene

Investigator(s): C. Jones and A. Doster

Status: New Competitive Grant effective Oct. 1, 2000

NEB-14-111 (Veterinary and Biomedical Sciences) A Novel Strategy to Test and Monitor Beef Feedlot Food-Safety Control Points

Investigator(s): D.R. Smith, L.L. Hungerford, R.A.

Moxley and T.J. Klopfenstein

Status: New Competitive Grant effective Nov. 1, 2000

NEB-14-115 (Veterinary and Biomedical Sciences) Porcine Reproductive and Respiratory Syndrome (PRRS)

Investigator(s): F.A. Osorio and R. Wills

Status: New Hatch project that contributes to NC-229

NEB-15-093 (Biochemistry) The role of Nuclear-encoded Sigma Factors in Maize Chloroplast Development

Investigator: L.A. Allison

Status: New Competitive Grant effective Aug. 3, 2000

NEB-17-075 (Entomology) Using Trace Elements for Labeling Corn Tissues and Insect Pests for Mark-Recapture Experiments

Investigator(s): B.D. Siegfried, L.J. Meinke, D.C.

Gosselin, T.E. Hunt and F.E. Harvey

Status: New State project effective July 1, 2000

NEB-21-064 Fusarium Mycotoxins in Cereal Grains

Investigator: M.B. Dickman

Status: Revised Hatch project that contributes to NC-129

NEB-44-042 (Panhandle Research and Extension Center) Agricultural Enhancement of Potato Production and Utilization

Investigator: A.D. Pavlista

Status: New Hatch project effective March 1, 2001

NEB-48-027 (South Central Research and Extension Center) Microbial Management of Plant Diseases in Sustainable Production Systems: Microbial Diversity, Habitat Receptivity and Pathogen Populations

Investigator: J.P. Stack

Status: New Hatch project effective Nov. 1, 2000

NEB-48-028 (South Central Research and Extension Center) Spatial Distribution and Sampling of Field Crop Insects

Investigator: R.J. Wright

Status: New Hatch project effective Nov. 1, 2000

Proposals Submitted for Federal Grants

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The following is a listing of proposals that were submitted after December 2000 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.

Ruma Banerjee — NIH — Reaction Mechanisms of Mammalian B₁₂-Dependent Enzymes — \$192,793

Shripat Kamble — USDA/CSREES — A Survey of Pesticide Use — Livestock in NE, ND, MN, SD, IA and KS — \$105,014

Kenneth G. Hubbard, Geoffrey Henebry and Rezaul Mahmood — NASA — Soil Moisture Persistence and Water Cycling through Land-Surface-Atmosphere Continuum in the Northern Great Plains — \$595,324

Kenneth G. Hubbard and Rezaul Mahmood — NOAA — Soil Moisture Climatology and Land Memory Processes in the Northern Mississippi and Missouri Basins — \$401,812

Marjorie F. Lou — NIH — Protein-Thio Mixed Disulfides in Cataractogenesis — \$1,286,072

Amit Mitra and James L. VanEtten — USDA/NRICGP — Chlorella Viruses: New Source of Plant Promoter Elements — \$360,608

Curtis L. Weller, Susan L. Cuppet and Keum Taek Hwang — USDA/NRICGP — Oxidation-Induced Changes in Grain Sorghum Wax — \$232,640

Milford A. Hanna and Girish M. Ganjyal — USDA/NRICGP — Value-added Processing of Sapodilla — \$82,146

Ismail Dweikat — USDA/NRICGP — Establishment and Utilization of a "Breeder-Friendly" DNA Marker Collection for Pearl Millet Improvement — \$243,548

David Scott Jackson and Deepak Sahai — USDA/NRICGP — Improvement of Starch Analysis Methods: Amylose Determination and Polymer Characterization — \$130,104

Robert W. Hutkins — USDA/NRICGP — Use of Oligosaccharides as Functional Food Ingredients — \$141,536

Susan M. Fritz, John E. Barbuto, Rick Rudd and Steven Frazee — USDA/NRICGP — County Commissioners' Leadership Capacity to Advance Community Viability — \$200,000

Azzeddine Azzam, John R. Schroeter and J. David Aiken — USDA/NRICGP — State Corporate Farming Restrictions and Industry Structure — \$34,996

Konstantinos Giannakas — USDA/NRICGP — Enforcement Issues and Efficiency in Organic Food Product Markers — \$67,371

Kulvinder S. Gill and Jitender S. Deogan — USDA/NRICGP — Molecular Characterization of a Major Gene-rich Region of Wheat — \$347,266

Raul G. Barletta — USDA/NRICGP — *Mycobacterium avium* subsp. *Paratuberculosis* intestinal invasion — \$198,977

Raul G. Barletta — USDA/NRICGP — Functional Genomic Analysis of *Mycobacterium paratuberculosis* — \$232,205

Gary D. Lynne, Kent M. Eskridge and William J. Waltman — National Science Foundation — Commitments to Networks and Norms in Carbon Sequestration — \$428,939

Stephen Ragsdale, Jess Miner and James Takacs — NIH — Inhibition of Methanogenesis in Ruminant Animals — \$195,692

Jeffrey D. Cirillo — USDA/NRICGP — Role of Entry Mechanisms in Virulence of *Mycobacterium marinum* — \$349,139

Clayton Kelling, Subramaniam Srikumaran, Amelia R. Woolums, Ruben Donis and Bruce Brodersen — USDA/NRICGP — Apoptosis and Cellular Immunity in BVDV and BRSV Co-Infection — \$365,482

Fernando A. Osorio and Osvaldo J. Lopez — USDA/NRICGP — Role of PRRSV-Specific Antibodies in Protective Immunity Against Porcine Reproductive and Respiratory Syndrome Virus Infections — \$294,663

Subramaniam Srikumaran — USDA/NRICGP — Molecular characterization of *Pasteurella (Mannheimia) haemolytica* leukotoxin-, integrin interactions — \$307,398

Gary Y. Yuen and Martin B. Dickman — USDA/NRICGP — Induced Resistance as a Biocontrol Mechanism — \$217,910

Jingliang Ju and Andrew K. Benson — USDA/NRICGP — Genomics and Population Structure of *Listeria monocytogenes* — \$228,370

Martin B. Dickman and Thomas E. Clemente — USDA/NRICGP — Programmed Cell Death in Soybean — Microbe Interactions — \$296,157

Madhavan Soundararajan — NSF — Spatial Variation in Responses of Tropical Trees to El Niño-induced Drought — \$35,861

Dee Griffin, Hank Cerny and Susanne Hinkley — USDA/NRICGP — Development of a Pre-Harvest Version of the USDA-FSIS Fast Antibiotic Screening Test — \$117,293

Raul Barletta — USDA/NRICGP through Texas A and M — Host-Pathogen Interactions of *M. avium paratuberculosis* in the Bovine Gut — \$183,601

Raul Barletta — USDA/NRICGP through Kuzell Institute — *Mycobacterium avium* subsp. *paratuberculosis* Intestinal Invasion — \$198,977

Xiao Cheng Zeng, Dennis J. Diestler and Ruqiang Feng — NSF — Multiscale Treatment of Solid-Fluid Interfaces: Development of Hybrid Monte Carlo and Finite Element Code — \$467,549

Raul Barletta — USDA/NRICGP through NADC — Functional Genomic Analysis of *Mycobacterium paratuberculosis* — \$232,205

Kyle D. Hoagland and Steven W. Ress — USGS — Director's Budget and Information Transfer Plan — \$30,375

Lloyd B. Bullerman and Jitka Stiles — USDA/NRICGP — Inhibition of Toxigenic *Fusarium* Species Using Biological Control Agents — \$205,978

Robert W. Hutkins — USDA/NRICGP — Displacement of *Escherichia coli* 0157:H7 from Ruminants by Competitive Exclusion Strategies — \$147,762

Kulvinder S. Gill, P. Stephen Baenziger, Thomas E. Clemente and Martin B. Dickman — NSF — Transposon-based Mutagenesis, Gene and Promoter Discovery Tools for Wheat — \$2,714,756

Raul G. Barletta — USDA/NRICGP — Identification of *Mycobacterium paratuberculosis* Virulence Determinants — \$481,022

Shelly McKee — USDA/NRICGP — Impact of Farm Practices and Processing on Antibiotic Resistant *Campylobacter* in Poultry — \$596,996

Ruben O. Donis — USDA/NRICGP — Functional Genomic Analysis of Bovine Viral Diarrhea Virus Fetal Tropism — \$381,240

Milford A. Hanna — USDA/CSREES — Industrial Agricultural Products Center — \$59,866

Stephen L. Taylor — USDA/CSREES — Midwest Advanced Food Manufacturing Alliance — \$432,160

Donald A. Wilhite — USDA/CSREES — Developing Drought Mitigation and Preparedness Technologies for the U.S. — \$187,082

Lance Meinke — USDA/ARS — Western Corn Rootworm Resistance to Insecticides — Development of Resistance Management Strategies — \$10,000

Rodney A. Moxley — USDA/NRICGP — Role of A/E Proteins in *E. coli*: 0157:H7 in Intestinal Colonization of Adult Cattle — \$401,259

Subramaniam Srikumaran — USDA/NRICGP — Molecular Characterization of *Pasteurella (Mannheimia) haemolytica* leukotoxin—B₂ Integrin Interactions — \$307,398

Stephen L. Taylor — USDA/Special Research Grants — Development and Quality/Safety Enhancement of Speciality Food Products — \$39,287

Susan L. Hefle — USDA/Special Research Grants — Alliance for Food Protection — \$140,311

Terry Klopfenstein, James Brandle and Charles Francis — USDA/Special Research Grants — Integrated Crop/Livestock/Agroforestry Research for Sustainable Systems in Nebraska — \$55,189

Donald P. Weeks — NSF — Molecular and Genetic Analyses of the Carbon Concentrating Mechanism of *Chlamydomonas reinhardtii* — \$35,845

Patrick J. Shea — USEPA/EPSCOR — Nebraska EA-EPSCoR Strategic Implementation Plan — \$17,400

John S. Weber — NIH — Phenotype Screens for Bone Marrow Failure — \$94,612

December 2000 Graduate Student Survey

Graduate student data represents enrolled and non-enrolled students for the fall 2000 semester. Only non-enrolled students actively pursuing graduate degrees within the time limit for granting degrees established by the Office of Graduate Studies are considered. The graduate program in the Agricultural Research Division (College of Agricultural Sciences and Natural Resources and the College of Human Resources and Family Sciences) increased 9.4 % from the fall semester 1999 to the fall semester 2000. Sixty-three percent of the graduate students in CASNR majors are supported by assistantships (state-appropriated GRA's and GTA's; grants; fellowships; and international agency or foreign country support). Thirty-three and 6/10 percent of the students in the College of Human Resources and Family Sciences are supported. Twenty-eight percent of our graduate students are not enrolled in IANR graduate majors on the sixth day of the semester.

Major/Unit	M.S.				Ph.D.				Total		
	GRA	GTA	Other ¹	Self	GRA	GTA	Other	Self	'98	'99	'00
College of Agricultural Sciences and Natural Resources											
Agricultural Economics	10	0	1	13	6	0	3	3	33	26	36
Agricultural Leadership, Education and Communication ²	2	1	2	34	0	2	0	5	34	35	46
Agronomy	7	1	22	34	6	0	16	12	134	119	98
Animal Science	17	2	26	3	14	0	24	1	86	88	87
Biochemistry	0	0	0	1	1	6	20	0	26	31	28
Biological Systems Engineering ³	5	0	6	6.5	2	1	6	4	27	26	30.5
Biometry	4	0	6	7	—	—	—	—	12	15	17
Entomology	1.5	0	11.5	45	3	0	12	2	39	64	75
Food Science and Technology	7	0	9	6	12	0	5	9	46	44	48
Horticulture ⁴	0	4.5	1	4	4	0	3.5	2	20	15	19
Mechanized Systems Management	2	1	1	3	—	—	—	—	8	7	7
Plant Pathology ⁵	0	1	1.5	3.5	2	1	5	2	14	8	16
School of Natural Resource Sciences ⁶	10	1	16	9	11	0	7	10.5	23	44	64.5
Veterinary and Biomedical Sciences ⁷	3	0	9	3	4	0	13	1	36	36	33
Total	68.5	11.5	112	172	65	10	114.5	51.5	538	558	605
College of Human Resources and Family Sciences											
Family and Consumer Sciences	3	7	6	24	—	—	—	—	36	35	40
Nutritional Science and Dietetics	2	7	2	21	—	—	—	—	24	41	32
Textiles, Clothing and Design -MS	1	0	2	4	—	—	—	—	8	5	7
-MA	0	1	0	4	—	—	—	—	0	5	5
Interdepartmental Nutrition	0	0	0	1	0	1	7	4	20	9	13
Interdepartmental Human Resources and Family Sciences	0	0	0	23	2	7	2	18	29	36	52
Total	6	15	10	77	2	8	9	22	117	131	149
Grand Total	74.5	26.5	122	249	67	18	123.5	73.5	655	689	754

- (1) = Other — grant support, international agency or foreign country support, fellowships
- (2) = Ph.D. students obtain degrees in Teachers College.
- (3) = Engineering degrees are offered through the College of Engineering and Technology.
- (4) = The Ph.D. program is in the Horticulture and Forestry major.
- (5) = Degrees obtained through the School of Biological Sciences
- (6) = The Ph.D. program is in the Horticulture and Forestry major or other departments.
- (7) = Ph.D. degrees are offered through UNMC.

NOTES:

*SNRS: Assumed five Ph.D.s in HFOR since Horticulture reported on 10 of 15 students included in the census data for the joint HFOR Ph.D. program. Eight students were included in the SNRS data (6 GEOG, 1 GENST, 1 CRPL).

*One hundred thirty-nine students are considered "outside" of CASNR (7 ALEC-Ph.D.; 27 BSE-M.S./Ph.D.; 17 PPTH -M.S./Ph.D.; 18 VBMS-Ph.D.; 13 SNRS-Ph.D, 6 CMHR, 1 ADCI, 1 CIVL ENG, 6 ENV ENG, 13 MBA-Agribusiness, 2-Bio, 10-BIOS, 9 GEOG, 1 COMP, 2 CHEM, 4 Museum, 1 Curr. and Inst., 1 General Studies).

*Approximately 22 students are shared and listed in only one department or split. Co-advising with six students split between BSE, PPLT, ENTO, HORT and SNRS. Students (12 Ph.D.s and 5 M.S.) majoring in Agronomy were only counted in SNRS.

HRFS= 17 Males and 132 females. There are 115 enrolled and 34 non-enrolled students. Within HRFS, 13 students are shared, three with CASNR majors (two in AnSci and PSDT) and only counted in HRFS (not counted in CASNR) and 10 are shared in areas of concentration and assumed to be counted in the area of concentration.

Non-enrollment percentages are based on the difference of the calculated total minus the enrolled data from the sixth-day census. This compensates for shared students and assumes that shared students are only listed on the census data under one graduate major.

CASNR = 605 total - 427 enrolled = 178 non-enrolled [178/605 = 29.42%]

CHRFS = 149 total - 115 enrolled = 34 non-enrolled [34/149 = 22.81%]

IANR = 754 total - 542 enrolled = 212 non-enrolled [212/754 = 28.12%]

Diane says

Always hold your head up but be careful to keep your nose at a friendly level.