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Agricultural Experiment Station News October 1983

THE AGRICULTURAL EXPERIMENT STATION
INSTITUTE OF AGRICULTURE
AND NATURAL RESOURCES
UNIVERSITY OF NEBRASKA-LINCOLN 68583-0704

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REALLOCATION PLANS

Several important steps will take place during the coming months relative to the reallocation process. IANR units have identified potential areas for reallocation both within IANR and outside of IANR.

The faculty will have until October 18 to respond to the reallocation criteria suggested by the Chancellor. Vice Chancellors will submit program reallocation nominations by October 25 and there will be Academic Planning Committee-sponsored subcommittee meetings the week of November 7 to hear reactions to the nominations. IANR units affected by the reallocation will be contacted before the list is submitted to the APC. The APC will submit recommendations to the Chancellor and IANR Vice Chancellor on November 18, 1983 and the final recommendations will be submitted to the Board of Regents on December 10, 1983.

Although this is a painful process, it is not anticipated that faculty will lose their positions as a result of the reallocation. The sole purpose is to facilitate reallocating resources from lower priority programs to higher priority needs. Since this is not a budget reduction, our overall program quality and effectiveness should be enhanced.

PARTIAL RETIREMENT OPPORTUNITIES

The Board of Regents approved a revised faculty partial retirement policy in 1983. It is available to faculty who have reached age 55 and who have 10 or more years of service to the University. This policy makes partial retirement more attractive and participants need not surrender any life, health or dental benefits. All IANR Unit Administrators have copies of the policy and interested faculty should visit with **Bill Cords** in the IANR Personnel Office.

ARS MAKES CHANGES

The Agricultural Research Service (ARS) announced that it will be making changes in its organizational structure. Major changes include:

1. Instituting a 10-member administrator's council to serve as the Agency's executive body.
2. Establishing a deputy administrator in each of the Agency's four regions to provide broad-based program leadership.
3. Consolidating the present 25 area and center offices into 11 areas. The area office for Nebraska, Iowa, Missouri and Kansas will be at Ames, Iowa.
4. Reorganizing administrative management in the field.
5. Consolidating information functions.
6. Establishing new and expanding current research programs with resources accrued from restructuring the management operations.

CHANGE OF DUTY STATION

James E. Partridge, Assistant Professor of Plant Pathology, participated in a Change of Duty Station for the month of June, 1983. He spent the month in the laboratory of Jolinda A. Traugh, Chair., Department of Biochemistry, University of California, Riverside. The purpose of his studies was to learn Traugh's system for the two-dimensional electrophoresis of ribosomal proteins and to compare the ribosomal proteins of fungi (Fusarium spp.), corn, and rabbits. Partridge taught his immunoblot system for visualizing ribosomal proteins from polyacrylamide gel slabs. Partridge strongly recommends the Change of Duty Station leave as a real "shot in the arm" for research endeavors.

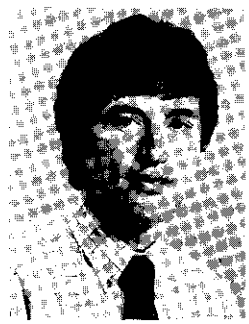
NEW EVENT: IANR AG EXPO

The IANR Deans and Directors group selected "IANR AG EXPO" as the name for the new annual event that will be held at the University Field Laboratory each summer. Twenty seven nominations were received in the Name The Event contest and **John Burbank, Foster Owen** and **Stan Wallen** were the three finalists.

The first annual IANR AG EXPO will be held Thursday, July 26, 1984 with the Departments of Agricultural Engineering, Animal Science, Veterinary Science and Agronomy (forage section) participating. The 1984 Ag Expo Planning Committee is actively finalizing plans for the event. In addition to focusing on animal related research being conducted at the University Field Laboratory, it will also include IANR extension and educational program emphasis as well.

NEW EXPERIMENT STATION PERSONNEL

Patricia K. Knaub, Associate Professor, Department of Human Development and the Family. Knaub received her B.S., M.S. and Ph.D. from the University of Nebraska-Lincoln. She is a member of the American Home Economics Association, National Council on Family Relations and the American Association of University Professors Executive Committee. Knaub is listed in the Outstanding Educators of America, Who's Who of American Women, Community Leaders and Noteworthy Americans and Who's Who in the Midwest. Her Experiment Station appointment began January, 1983.



Gary A. Anderson, Assistant Professor, Department of Veterinary Science. Anderson received his B.S. at South Dakota State University, M.S. and D.V.M. from Kansas State University and is presently completing his Ph.D. from the University of California-Davis. He is a member of the American Veterinary Medical Association, United States Animal Health Association and the Wildlife Disease Association. He has received the Schultz-Werth Research Writing Award and the National Institute of Environmental Health Research Fellowship. Anderson's Honorary Organizations include Phi Kappa Phi, Phi Zeta (Veterinary) and Gamma Sigma Delta. Dr. Anderson started his employment at the University April 1, 1983.

RESEARCH LEAVE PROGRAM SUSPENDED

The University Research Council has suspended the Research Leave Program. Diminished resources, faculty priorities expressed in a recent survey of faculty preferences, and the presence of the Faculty Development Leave program awarded through college and departmental procedures, were given as reasons for this action. Leaves already granted for 1983-84 are not affected by this decision.

Faculty are encouraged to apply to the University Research Council for travel grants when they are presenting papers at scholarly meetings. The deadline for January 1, 1984 to March 31, 1984 is December 1, 1983.

NEB 44-020 - Efficient Use of Limited Water Supplies

This is a revised Hatch project with **C. D. Yonts, J. A. Smith, D. S. Nuland** and **L. A. Nelson** of the Panhandle Station the principal investigators. Objectives are 1) develop a correlation between amount and time of water application and crop yields to optimize production with the most efficient use of energy and available water; 2) develop a semi-automatic single-line gated pipe system for surface irrigation that is programmed daily to allow efficient use of water, energy, and labor; and 3) develop methods of reducing soil erosion which occur with existing tillage and irrigation practices used in the Panhandle.

1982-83 GRANT SUPPORT

IANR received 674 grant awards out of 1,124 for UNL during July 1, 1982 through June 30, 1983. The IANR accounted for $11,189,485 (60%) of the UNL total of $18,797,925. Distribution of grants by Division is as follows:

Research	$ 4,499,790	40.2%
Teaching	67,211	.6%
Extension	2,035,920	18.1%
Water Resources	129,047	1.2%
International Programs	3,109,032	27.8%
Nebraska Forest Service	530,350	4.7%
Conservation and Survey	813,135	7.3%
Vice Chancellor's Office	5,000	0.1%
Total	$11,189,485	100.0%

PROJECT ACCOMPLISHMENTS

Roy D. Dillon, Professor, Agricultural Education. Project: Assessment of Time Utilization, Use of Advisory Councils, and the Nebraska Vocational Agriculture Core Curriculum.

The following significant results were obtained:

1. Ninety-five percent of Nebraska secondary schools studied had organized vocational advisory councils.
2. Not all vocational teachers were actively involved in the local vocational education plan development.
3. Local vocational education advisory councils are involved in local plan development in only 37 percent of the secondary schools studied.
4. Agriculture teachers need to develop program activities which will inform school staff, vocational agriculture students, the vocational advisory council and the community about the use of the *Core Curriculum.*
5. Program of public information about the use of the *Core Curriculum* should stress the practical and usefulness of core materials to employability of vocational agriculture graduates.
6. Vocational education advisory councils should have significant involvement in making recommendations regarding which units from the *Core Curriculum* should be included in the local vocational agriculture program.
7. Data were analyzed from 104 vocational teachers on time used in 52 activities within 12 duty categories. Results show: a) vocational teachers do not spend equitable amount of time each day of the week; b) vocational teachers have a large amount of time each day they personally control; c) an intensive study of time management principles is an effective way to change how vocational teachers plan and use their time.

Robert C. Sorensen, Professor, Agronomy. Project: Soil Factors and the Mineral Nutrient Uptake by Plants Grown on Selected Northern Nebraska Soils.

The soils of the Nebraska Sandhills, although inherently fertile, often require fertilizers and lime for maximum production of range and cultivated plants. Productive plants, in addition, supply humus to the soils to improve water-holding capacity and reduce erosion. To make efficient use of fertilizers and soil amendments, the chemical characteristics of the soil must be known. It is the purpose of this project to determine the type of chemical reactions which are going on in these sandy soils, and how they affect movement and plant-availability of nutrients.

As a result of this research, the general patterns of movement of phosphorus have been established. Although other nutrients affect the movement of phosphorus, each moves separately. Organic compounds present in soil are involved in the movement. There seems to be little problem with reversion of phosphorus to forms not accessible to plants. Most of these soils have the capability of supplying large amounts of calcium, magnesium and potassium to plants. Several soil testing procedures are too insensitive for determining the amount of lime needed on these sandy soils. Whereas in many acid soils, problems are caused by high levels of natural aluminum, this has not proven true in Sandhills soils. These findings and others not described will assist in planning fertilizer and lime programs for these soils.

Austin J. Lewis Associate Professor, Animal Science. Project: The Requirements for the Utilization of Protein and Amino Acids by Swine.

The requirement of the baby pig for the amino acid lysine was shown to be considerably higher than the value listed by the National Research Council. Feeding the higher lysine level increased weight gains by 20% and improved feed efficiency by 10%. Concern had been expressed by some feed companies about the possibility that the high content of the amino acid arginine present in practical swine diets might interfere with lysine utilization. Our research has demonstrated that the interference is minimal, and of little practical importance.

Threonine was shown to be the third-limiting amino acid (after lysine and tryptophan) in corn for growing swine. The new high-yielding varieties of high lysine corn were found to result in the same performance as normal corn, provided diets were formulated to contain the same lysine content. Approximately 15% less soybean meal was needed in the diet when high lysine corn was used.

CHECK-OFF BOARD REMINDER

Grant proposals for Corn, Sorghum, Soybeans and Wheat Check-off Boards are due in the AES Director's Office by November 15, 1983.

Grant application guidelines were published in the September newsletter.

NEW OR REVISED RESEARCH PROJECTS

NEB 10-095 - Factors Affecting Concentrated Irrigated Development in the Sandhills

This new Hatch project has **M. E. Baker** and **P. H. Gessaman** of the Agricultural Economics Department as the principal investigators. Objectives of the research are 1) develop investment budgets, costs and returns budgets and cash flows for case study models of irrigation developments with federal income tax provisions incorporated; 2) identify and analyze alternative public actions affecting concentrated irrigation development; 3) develop and analyze changes in public management alternatives which influence the rate of concentrated irrigation development; and 4) analyze the changes in public management of concentrated irrigation development on private incentives for such development.

GRANTS AND CONTRACTS

Aberle, E. D. (Animal Science) USDA/ARS	37,000
Anderson, B. (Agronomy) - 3M Company	7,950
Anderson, B. (Agronomy) - Miscellaneous Donors	1,800
Brandle, J. R. (Forestry, Fisheries & Wildlife) - USDA/Forest Service	14,500
Burnside, O. C. (Agronomy) - Rohm and Haas Company	1,000
Campbell, J. B. (North Platte Station) - USDA/ARS	36,000
Campbell, J. B. (North Platte Station) - Ralston Purina Company	750
Campbell, J. B. (North Platte Station) - Creative Concepts	2,500
Clanton, D. C. (North Platte Station) - Distributors Processing, Inc.	5,000
Clemens, E. T. (Veterinary Science) - Pioneer Hi-Bred International, Inc.	8,000
Compton, W.A. (Agronomy) - Jon Holtzman	20
Dickason, E. A. (Entomology) - Union Carbide	750
Ferguson, D. L. (Vet Science) - George Hormel & Company	330
Flowerday, A. D. (Agronomy) - The Popcorn Institute	750
Gustafson, W. A. (Southeast Ext. & Res. Center) Donation/Gift - Heckendorn Mfg. Company	617
Klocke, N. L. (North Platte Station) - Twin Platte & Middle Republican Natural Resources District	4,000
Klopfenstein, T. (Animal Science) - Development Associates	1,250
Klopfenstein, T. (Animal Science) - Farmland Ind.	4,000
Mandigo, R. W. and **Calkins, C. R.** (Animal Science) - The Kroeger Company	14,410
Markwell, J. P. (Ag Biochemistry) - USDA-S&E	27,092
McGill, D. P. (Agronomy) - USDA/ARS	60,900
McGill, D. P. (Agronomy) - Nebraska Crop Improvement Association	200
Meyer, G. E. (Ag Engineering) - USDA/S&E	70,000
Riordan, T. P. (Horticulture) - Nebraska Turfgrass Foundation	5,600
Roeth, F. W. (South Central Station) - Union Carbide	2,025
Roeth, F. W. (South Central Station) - Rohm and Haas	750
Roeth, F. W. (South Central Station) - Dow Chemical	2,500
Schneider, N. R. (Vet Science) - Hormel Company	1,044
Schneider, N. R. (Vet Science) - Weichman Pig Co.	87
Splinter, W. E. (Ag Engineering) - USDA/ARS	47,500
Steadman, J. R. (Plant Pathology) - Rohm & Haas Co.	2,000
Stubbendieck, J.; Waller, S. S. (Agronomy); **Gilley, J. R.** (Ag Engineering) - USDA/S&E	63,046
Vidaver, A. K. (Plant Pathology) - USDA/S&E	70,000
Watkins, J. (Plant Pathology) - Rohm & Haas Co.	1,500
Watkins, J. (Plant Pathology) - Mobay Chemical	300
Witkowski, J. F. (Northeast Station) - Union Carbide	3,300
Witkowski, J. F. (Northeast Station) - Otsuka Chemicals	500
	498,971