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Agricultural Experiment Station News October 1984

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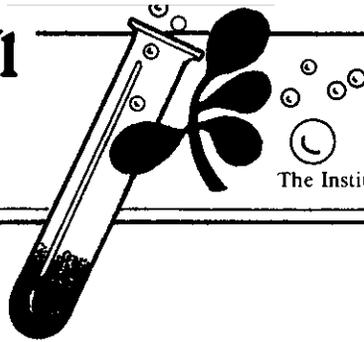


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OCTOBER 1984

VOL 18 NO 4

OUTSTANDING RESEARCH AWARDS

Nominations for the 1985 University of Nebraska Outstanding Research and Creative Activity Awards are due in Regents Hall by **November 2, 1984**. Nominations may be submitted and seconded by any full-time faculty members of the University of Nebraska.

The Agricultural Research Division has many faculty who are deserving of this award and it is hoped that several strong nominations will be submitted from IANR faculty. All faculty should have received the nomination materials from Vice President Howard Ottoson in September.

SPLINTER RECEPTION AND SEMINAR REMINDER

You are invited to a
RECEPTION AND SEMINAR
in honor of the election to the
NATIONAL ACADEMY OF ENGINEERING
of

WILLIAM E. SPLINTER

George Holmes Distinguished Professor and Head
Department of Agricultural Engineering

Friday, October 26, 1984

**Nebraska Room
Nebraska Center for Continuing Education**

2:30 p.m. Reception

3:00 p.m. Seminar Program

Opening Remarks: Chancellor Massengale
Introduction: Vice Chancellor Arnold
Seminar: "Engineering Biological Systems"
Dr. William E. Splinter

HOME ECONOMICS REVIEW

CSRS has authorized a comprehensive review of the Departments of Education and Family Resources; Human Development and the Family; Human Nutrition and Food Service Management; and Textiles, Clothing and Design. The review is scheduled for the week of **November 4, 1985**.

SUPPLEMENTAL BUDGET REQUEST

Although the request by the Legislature Appropriation Committee for the University to submit a supplemental budget request based on 95 percent of the 1984-85 budget has caused considerable concern, this request is not to be viewed as a budget cut. The Chairman of the Appropriations Committee has indicated it will be easier to defend the University's budget request if it clearly indicates what increased funding will give the University and what will be lost if additional funding is not forthcoming.

The Board of Regents submitted a budget request in September that constituted a 12.5 percent increase over the 1984-85 state appropriation. However, the supplemental budget request to be submitted in November is to be 95 percent of the 1984-85 base with an additional 5 percent being slated for review. This new budgeting approach is similar to that used by the City of Lincoln in recent years. Programs selected for review in the Agricultural Research Division have not been identified as of this time.

IANR FACULTY SALARIES

The 1984-85 salaries for faculty within IANR increased 11.9 percent over the 1983-84 level. The July 1 salary adjustments were considered as the first year of a three-year improvement package and greatest progress was made at the Assistant Professor and Associate Professor levels.

The following table gives the IANR averages by rank. Individuals with administrative responsibilities are not included.

	No.	Annual Salary		% Inc.
		1983-84	1984-85	
Professor	118	\$39,022	\$43,392	11.2
Assoc. Prof.	79	30,285	34,061	12.5
Asst. Prof.	32	27,993	31,957	14.2
Average		\$34,467	\$38,575	11.9



The Agricultural Research Division provides information and educational programs to all people without regard to race, color, national origin, sex or handicap.



IANR CAPITAL CONSTRUCTION REQUEST

The Greater Nebraska Capital Construction Request ranked 6th in priority among projects approved by the Board of Regents for the 1985-86 budget request. The following projects are included in the Greater Nebraska package:

Field Laboratory:	
Headquarters Bldg. Planning	\$ 55,000
Northeast Res. & Ext. Center:	
Shop & Storage Bldg.	190,400
Hdqtrs. Bldg. Addition	198,400
Panhandle Res. & Ext. Center:	
Greenhouse Renovation & Pesticide Disposal Facility	93,000
South Central Res. & Ext. Center:	
Service & Chem. Storage Bldg.	198,700
West Central Res. & Ext. Center:	
Swine Growing/Finishing Unit	376,700
Animal Metabolism Res. Unit	286,500
Shop & Storage Bldg.	180,400
UNSTA:	
Multi-Purpose Bldg.	200,600
Hort. Classroom & Lab.	548,600
TOTAL REQUEST	\$2,328,300

RESEARCH SPONSOR NEGOTIATIONS

Often questions arise on sponsored research projects regarding whether or not indirect costs must be paid, if indirect cost rates can be negotiated, and whether a sponsor is entitled to concessions on patent rights and other intellectual property. **According to University policy, only the Chancellor can waive indirect costs and approval by the Board of Regents is required regarding specific patent arrangements.**

Researchers should keep in mind that before any commitments are made to sponsors which involve waivers, reduced rates, or other concessions, proper administrative clearance should be obtained. While there is some flexibility in these arrangements, it is advantageous to iron out acceptable arrangements during the negotiation phase rather than to make informal commitments which are unacceptable and will need to be changed later.

If a sponsor has a written policy which affects its ability to pay overhead costs, enclosing a copy of the policy with the research proposals when submitted for administrative approval can avoid unnecessary delays. Faculty are encouraged to call **Dale Vanderholm (472-2046)** if they have any questions involving this area.

DISTRICT STATIONS BECOME CENTERS

The Board of Regents approved name changes for the five district stations at their September meeting. The official names now are:

- **University of Nebraska**
Northeast Research & Extension Center
Concord, Nebraska
- **University of Nebraska**
Panhandle Research & Extension Center
Scottsbluff, Nebraska
- **University of Nebraska**
South Central Research & Extension Center
Clay Center, Nebraska
- **University of Nebraska**
Southeast Research & Extension Center
Lincoln, Nebraska
- **University of Nebraska**
West Central Research & Extension Center
North Platte, Nebraska

The five Extension districts served by these Centers will be referred to by their respective regional designations from now on since the number designation will no longer be used. It is hoped these changes will enhance the understanding of the role and mission of these administrative units to those who are not familiar with our programs.

REPORTING RESEARCH ACCOMPLISHMENTS

Research Project Leaders and Unit Administrators are reminded that whenever a Agricultural Research Division project is scheduled for revision or termination, the project leader is requested to prepare a one- or two-paragraph report highlighting the significant research accomplishments. This statement should be forwarded to the Dean's Office with the proposed project revision outline and will be shared with the peer review panel members as background information.

The report should be written for the general public. These reports will be included in Agricultural Research Division Newsletters and the Agricultural Communications Department will also receive a copy for preparing possible news releases.

It is hoped these brief reports will give greater visibility to the research conducted in the Agricultural Research Division. With shrinking budgets and the need to maintain high visibility of our research programs, opportunities such as this cannot be ignored. Many of our research projects result in truly outstanding accomplishments and these need to be communicated beyond the normal scientific channels.

FEDERAL BUDGET UPDATE

If the House/Senate Conferees budget report is approved by Congress, modest increases in Federal support for agricultural research programs can be expected in 1985. Hatch and McIntire-Stennis formula funds are projected to increase by 2.8 percent with no increase in Animal Health (1433) funds.

	<i>FY 1984 Actual Budget</i>	<i>FY 1985 Conference Request</i>
	<i>(in Thousands of Dollars)</i>	
Cooperative State Research Service:		
Hatch	152,281	156,484
McIntire-Stennis	12,702	13,053
Animal Health	5,760	5,760
Special Grants	25,234	27,328
Competitive Research Grants:		
Biotechnology	-0-	20,000
Plant Sciences	15,000	16,500
Animal Sciences	-0-	4,500
Pest Science	-0-	3,000
Human Nutrition	2,000	2,000
	<u>17,000</u>	<u>46,000</u>

The proposed increases in the Competitive Research Grants program will provide new sources of funding in high priority areas.

PROGRESS ACCOMPLISHMENT REPORT

Peer reviews have been held recently and revised projects have been developed for the following projects:

"Utilization of Wheat Straw and Other Crop Residues by Beef Cows." John Ward (Animal Science) is the project leader.

A technique was developed to treat stacks of low quality roughages with anhydrous ammonia to improve its feeding value. Treating wheat straw and corn stalks resulted in 20-25 percent increase in intake by beef cows and digestibility was improved by 10-12 percent. Gestating beef cows wintered on the treated roughage had significantly higher gains.

"Insects Affecting Tree Plantings in Nebraska." Ackland Jones (Entomology) is the project leader.

Studies of a pine coneworm, a pest of pine seed production, indicate the insect commonly destroys about one-third of the cone crop. The seasonal flight period of the adult is from mid June to mid July. The flight activity of the male begins and ends slightly earlier than that of the female. Peak flight activity occurs the first week of July. Females usually mate 2 or 3 times. Three species of parasitic wasps were recovered from coneworm pupae.

The research also determined the distribution of an aphid pest of honeysuckle first discovered in Nebraska in 1981. This aphid is now damaging honeysuckle in windbreaks and landscape plantings throughout most of the state. Five foliar sprays and three soil-incorporated insecticides were proven effective in controlling this pest.

FIELD LAB SECURITY

The University Field Laboratory has a contracted security service for nights and weekends. Staff who will be working at the Laboratory during off-hours should have identification. ID cards for students can be obtained from **Twila Berman** at the Headquarters Office.

FIELD LABORATORY NAME CHANGE?

During the process of approving the name changes for district research and extension centers, the Board of Regents suggested consideration be given to also changing the name for the University Field Laboratory. It was the general consensus that the "Field Laboratory" designation did not adequately reflect the scope of the program activity at this facility.

Since the August Board Meeting, the possibility of considering alternative names has been discussed with several groups within IANR. Although there was not unanimous agreement, it was generally agreed that a name change may be desirable in terms of the projected role and mission of the facility.

Many alternative titles have been proposed for this 9,500 acre facility that currently serves as a primary research site for nine IANR administrative units. Since it is the only multi-disciplinary research facility in the Southeast Extension District, it serves a broad clientele base. After the various groups considered alternatives, the name "**University of Nebraska Agricultural Research and Development Center**" tended to receive the most support. Since we are currently putting together the long range plan for this facility and hope to obtain Legislative support for a sizable capital construction package in the near future, the name change should occur soon if it is going to occur.

Irv Omtvedt would appreciate receiving comments from faculty and staff relative to this proposal by **November 1, 1984**. Plans are to formulate a recommendation at that time for administrative consideration.

COMMODITY CHECK-OFF BOARD PROPOSALS

All research proposals to be considered for funding for the period **July 1, 1985 through June 30, 1986** by the Corn, Sorghum, Soybean and Wheat Check-Off Boards must be submitted to the **Director's Office** by **November 21, 1984**. New proposals funded by the check-off boards last year pointed out the recent tendency to emphasize utilization and marketing research. While this pattern may continue, there is no clear indication of research emphasis preferred for the coming year so proposals are solicited for all areas of applied and basic research relating to these commodities. Guidelines for proposals will be mailed to ARD units by mid-October. If there are any questions, contact **Dale Vanderholm**.

NEW OR REVISED PROJECTS

Improvement and Evaluation of Oats and Barley (12-002)

John W. Schmidt, *Agronomy*

Objectives: (1) identify winter barley genotypes from germplasm intercrosses with improved winterhardiness, yield and straw strength. (2) determine value of differing depths of crown placement and production practices for improving winter survival of winter barley. (3) identify strains of winter and spring barley and spring oats that will be valuable to Nebraska growers.

Revised Hatch project effective July 17, 1984.

Mineral Requirements of Swine (13-022)

Ernest R. Peo and Austin J. Lewis, *Animal Science*

Objectives: (1) determine the biological availability of inorganic and organic sources of zinc, copper, manganese and magnesium for G-F swine. (2) determine the interactions between Ca and P and the bioavailability and/or utilization of Zn, Cu, Mn and Mg for G-F swine. (3) determine the effect of fluorine on skeletal integrity in swine.

Revised Hatch project effective July 1, 1984.

Evaluating the Utilization of Grain in Diets Fed to Finishing Cattle (13-071)

Riek A. Stock, R. A. Britton, T. J. Klopfenstein, Terry L. Mader, *Animal Science and Northeast Research and Extension Center*

Objectives: (1) determine combinations of factors which affect acidosis and starch digestion. (2) quantify the factors which affect the utilization of grain in finishing cattle diets. (3) determine the magnitude of factors which affect site, rate and extent of starch digestion.

New Hatch project effective July 20, 1984.

Factors Affecting Functional Leghemoglobin in Legume Nodules (15-030)

Robert V. Klucas, *Agricultural Biochemistry*

Objectives: (1) determine the forms of leghemoglobin in intact nodules on normal and physiologically stressed plants. (2) characterize ferric leghemoglobin-reducing systems in legume nodules.

Competitive grant effective August 1, 1984.

Biological Control of Soil-Borne Plant Pathogens in Integrated Crop Management Systems (21-022, NC-125)

Michael G. Boosalis, Daniel H. Yocom, Gall A. Wicks, *Plant Pathology and West Central Research and Extension Center*

Objectives: (1) develop biotic agents for plant disease

control. (2) assess the effect of tillage and crop residue management practices on soil microorganisms and plant health. (3) integrate biological control into crop disease management systems.

Revised Hatch project effective October 1, 1984.

Management and Biology of Birds and Rodents in Agricultural Systems (26-044)

Ron J. Johnson, *Forestry, Fisheries and Wildlife*

Objectives: (1) investigate problems and develop solutions associated with interactions among birds, rodents and agricultural systems in Nebraska.

New Hatch project effective August 1, 1984.

Bionomics, Vector Capabilities and Management Strategies for Face Flies (43-033, NC-154)

John B. Campbell, *West Central Research and Extension Center*

Objectives: (1) determine major factors that affect behavior, biology and population dynamics of face flies. (2) evaluate the epizootiological relationships of face flies and organisms causing IBK-pinkeye and IBR virus. (3) compare face fly suppression technology and integrate the most effective ones into a practical management plan.

Revised Hatch project effective October 1, 1984.

Field Crop Arthropod Distribution and Control in South Central Nebraska (48-003)

LeRoy L. Peters, *South Central Research and Extension Center*

Objective: (1) evaluate control measures for corn rootworm, sorghum greenbugs, and spider mites in south central Nebraska. (2) determine the economic injury level of these pests in south central Nebraska and develop practical and accurate methods for the producer to use in evaluating his pest problems. (3) determine the species composition, hosts, and distribution of tetranychid mites and associated predaceous mites in Nebraska.

Revised Hatch project effective July 17, 1984.

Soybean Cultural Practices and Cropping Systems for South Central Nebraska (48-009)

Roger W. Elmore, *South Central Research and Extension Center*

Objectives: To develop soybean production practices that either increase yields or decrease costs while conserving soil and water resources. A major emphasis will be to study the interactions of diverse genotypes with various production practices in order to highlight genotypes or plant characteristics especially suited to specific environments.

New Hatch project effective August 1, 1984.

NEW FACULTY ON BOARD

Michael B. Liewen, Assistant Professor of Food Science and Technology on a 70 percent Extension and 30 percent Research appointment. He joined the faculty on August 1, 1984 from the University of Wisconsin where he received his B.S. degree in Bacteriology and his M.S. and Ph.D. degrees in Food Science. He worked two years as a microbiologist before going to graduate school.



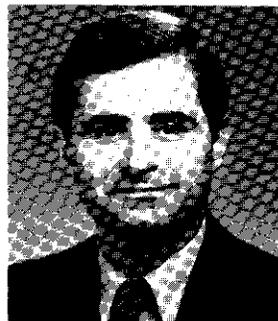
Michael B. Liewen

Stephen C. Mason, Assistant Professor of Agronomy on a 75 percent Teaching and 25 percent Research appointment. He joined the faculty on August 20, 1984 from Purdue University where he received his M.S. and Ph.D. degrees in Agronomy and was a visiting assistant professor of International Agronomy. He received his B.S. degree in Agricultural Education from the University of Missouri and served as an agronomist in Haiti for five years and in Colombia for two years.



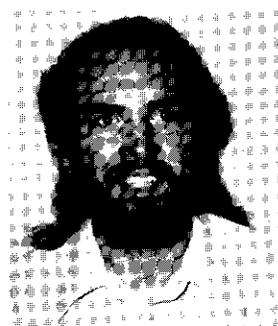
Stephen C. Mason

Fernando A. Osorio, Assistant Professor of Veterinary Science on a 75 percent Diagnostic Service and 25 percent Research appointment in veterinary virology. He is a native of Argentina and received his DVM degree from Buenos Aires National University. He spent one year in an equine practice and six years in a veterinary virology research position for the Argentine Department of Agriculture before going to Iowa State University where he earned his M.S. and Ph.D. degrees in Veterinary Microbiology. He joined the faculty on September 1, 1984.



Fernando A. Osorio

Robert J. Spreitzer, Assistant Professor of Agricultural Biochemistry on a 75 percent Research and 25 percent Teaching position in plant molecular biology. He joined the faculty on September 1, 1984 from University of Geneva, where he was on a Swiss NSF Postdoctoral Research Associate position with Jean-David Rochoix. He is a native of Ohio and received his B.S. degree in Biology from Cleveland State University and his Ph.D. degree in Biology from Case Western Reserve University. He spent three years as a Postdoctoral Research Associate in Agronomy at the University of Illinois prior to going to Switzerland in 1982.



Robert J. Spreitzer

Subramaniam Srikumaran, Assistant Professor of Veterinary Science in a 100 percent Research position in immunology. He joined the faculty on September 1, 1984 from Amherst College where he was on a Postdoctoral Research Associate position in the Hybridoma Research Laboratory. He is a native of Sri Lanka and received his BVS degree from University of Sri Lanka. He served as a Government Veterinarian in Sri Lanka for five years before going to the University of Maryland where he earned his M.S. and Ph.D. degrees in Animal Sciences in immunology.



Subramaniam Srikumaran



**RESEARCH GRANTS AND CONTRACTS
RECEIVED
SEPTEMBER 1984**

<i>Agricultural Biochemistry</i>	
Markwell, J. P. - National Science Foundation	\$47,920
Miscellaneous Grants Under \$5,000 each	1,100
<i>Agricultural Engineering</i>	
DeShazer, J. A. - USDA/ARS	6,000
Miscellaneous Grants Under \$5,000 each	2,000
<i>Agronomy</i>	
Jawson, M. D. - USDA/ARS	29,400
Norman, J. M. - NASA	42,992
Miscellaneous Grants Under \$5,000 each	6,085
<i>Animal Science</i>	
Johnson, R. K. - USDA/ARS	10,000
Miscellaneous Grants Under \$5,000 each	10,000
<i>Center for Agricultural Meteorology and Climatology</i>	
Blad, B. L. - Standard Oil	19,750
<i>Environmental Programs</i>	
Gold, R. E. - USDA/S&E	14,787
<i>Food Science and Technology</i>	
Satterlee, L. D. - Nebraska Department of Economic Development	32,000
Miscellaneous Grants Under \$5,000 each	1,500
<i>Horticulture</i>	
Miscellaneous Grants Under \$5,000 each	8,766
<i>Northeast Research and Extension Center</i>	
Miscellaneous Grants Under \$5,000 each	7,200
<i>Panhandle Research and Extension Center</i>	
Miscellaneous Grants Under \$5,000 each	4,500
<i>Plant Pathology</i>	
VanEtten, J. L. - NIH	67,552
VanEtten, J. L. - Department of Energy	65,000
Miscellaneous Grants Under \$5,000 each	1,510
<i>South Central Research and Extension Center</i>	
Miscellaneous Grants Under \$5,000 each	3,000
<i>Veterinary Science</i>	
Ferguson, D. L. & Ward, J. K. - (Animal Science) SmithKline Animal Health Products	18,850
Frey, M. L. - USDA/ARS	12,800
<i>West Central Research and Extension Center</i>	
Campbell, J. B. - USDA/ARS	14,000
Miscellaneous Grants Under \$5,000 each	2,500
Total	429,212

THOUGHTS REGARDING SUCCESS

"Success lies not in achieving what you aim at
but in aiming in what you ought to achieve."

USDA FY '85 COMPETITIVE RESEARCH GRANTS

Research staff are reminded of upcoming closing dates for proposals to the Competitive Research Grant Program. The deadlines for receipt of grant proposals in the **Agricultural Research Division Office** are:

- November 19** — Biological Stress on Plants
- Entomology and Nematology
- December 3** — Biological Nitrogen Fixation
- December 3** — Human Requirements for Nutrients

NSF FELLOWSHIPS AVAILABLE

The following NSF Fellowships were announced in the current NSF Newsletter. For additional information, including deadlines for applications, contact the **Agricultural Research Division Office** or the **Office of Research and Sponsored Programs**.

NATO POSTDOCTORAL FELLOWSHIP — For advanced study outside the U. S. in a country that is either a member of NATO or in a neighboring country that cooperates with NATO.

MINORITY GRADUATE FELLOWSHIPS — For students of minority groups that are under-represented in the sciences and engineering, for study leading to a Masters or Doctoral Degree.

GRADUATE FELLOWSHIPS — For study leading to a Masters or Doctoral Degree at any nonprofit U. S. or foreign institution of higher education offering advanced degrees in science or engineering.

POSTDOCTORAL RESEARCH FELLOWSHIPS - PLANT BIOLOGY — Third year of this program to be officially announced soon.

CANCER AND SMOKING DISEASE RESEARCH

A portion of the cigarette tax in Nebraska is allocated to support research relevant to cancer and smoking diseases. The Nebraska Department of Health encourages IANR faculty to develop and submit research proposals to the Nebraska Cancer and Smoking Disease Research Program. Funding is available for one-year proposals up to \$50,000. Proposals will be due in December. Faculty desiring additional information should contact **Robert Leopold**, Chairperson for the program, at 471-2158.