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## ARD News December 1998

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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

December 1998

Volume 33, Number 2

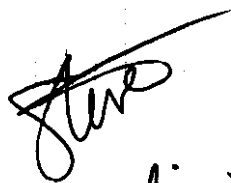
### Seasons Greetings

The Agricultural Research Division staff extends to all faculty and staff our best wishes for a joyful holiday season and a productive new year.

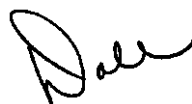
1998 has been a year of numerous successes. One of the highlights was the receipt of funding from the Nebraska Legislature to establish a major interdisciplinary research effort in preharvest food safety centered on *E. coli* 0157:H7. During the last year, our accomplishments in value-added processing, animal genetics and breeding and animal health were also particularly notable. ARD faculty continue to obtain increased grant and contract funding and to produce greater outputs from their research projects.

We expect 1999 to be a year of challenge for the ARD staff as well for our project leaders. I am currently serving as Chair of the Experiment Station Section and Experiment Station Committee on Organization and Policy (ESCOPE). These are subcomponents of the National Association of State Universities and Land Grant Colleges. In June, I also will become the Chair of the National Agricultural Biotechnology Council. Dale Vanderholm recently completed his service as the President of the Agriculture Research Institute and Chair of the North Central Experiment Station Directors Association. Dale is now the senior North Central Region representative on ESCOP. We believe that this service to the "system" is essential to maintain a strong voice for agricultural research at the national level, but it does indicate that a portion of our time is devoted to issues that are broader than those at the University of Nebraska.

The Agricultural Research Division is finishing preparation of our 112th Annual Report. We hope that you will read this report and help celebrate the many accomplishments of your colleagues that are documented in the publication. We believe that the Annual Report accurately presents the overall strength and productivity of ARD. Thanks to each of you for helping make our organization recognized outside Nebraska for quality and excellence and acknowledged by Nebraskans as being relevant in addressing the issues important to our state. We look forward to working with you in 1999 to ensure that these perceptions continue.



Daniel



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## "Pioneering the Future" Database

As you may be aware, ARD has been developing a database of our research projects that will allow decision makers, clientele, UNL employees and students to better understand the accomplishments of our faculty. Such a database has been requested from such diverse sources as regents, congressional staff, commodity board members and state agency staff. We decided to develop a simple, web-based, searchable database that can be easily updated. Similar databases are in use at Oregon State University and Clemson University. Similar databases are under development in several other states. The ARD database is titled "Pioneering the Future."

ARD staff have set up the shell for the database as a part of the ARD web page. We will enter the basic information for each of the projects including the name of the principal investigator, project title, unit and project identification number. In December, each principal investigator will receive instructions for completing the data base. You will be asked to provide contact information, goals/objectives of the project, region of the state that the research applies, commodity being studied and program area related to the research. You also will be asked to provide, using lay terminology, a project description, results to date and implications of the project. We anticipate that this task will take no longer than 15 minutes since you are the authority regarding your research project.

Providing information about our research accomplishments to decision makers and taxpayers is essential if we are to continue receiving support for our projects. Taxpayers want to see what is being accomplished with the money that they are spending on research. The ARD staff encourages each project leader to take this task seriously and to provide complete and quality information for the database. Please keep in mind that state and federal taxpayers are providing ARD with about \$250,000 of appropriated funds per FTE to support research. These funds could easily disappear if we choose not to be accountable to the people who pay taxes.

## CSREES Appropriation for FY 1999

President Clinton vetoed the FY 1999 appropriations bill for Agriculture, Rural Development, Food and Drug Administration, and Related Agencies on Oct. 8. An omnibus spending agreement (H.R. 4328) was passed by Congress and the president signed the legislation Oct. 21. The omnibus appropriation bill contained FY 1999 funding for USDA. This appropriation contained language that prohibited funding for the Fund for Rural America and the Initiative for Future

Agricultural and Food Systems. Both programs were authorized in the Agricultural Research, Education and Extension Reform Act of 1998 and funds were provided from the mandatory portion of the USDA budget. Listed below are CSREES budget allocations for FY 1999 (in thousands of dollars):

Program	FY 1998	FY 1999
<b>Base Funds:</b>		
Hatch Act	168,734	180,545
McIntire-Stennis	20,497	21,932
Animal Health	4,775	5,109
Evans-Allen	27,735	29,676
Subtotal	221,741	237,262
<b>National Research Initiative:</b>		
Plant Systems	37,000	41,000
Animal Systems	24,000	29,000
Nutrition, Food Qual. & Health	8,000	16,000
Natural Resources & Environment	17,500	20,500
Processes & New Products	6,800	8,200
Markets, Trade and Rural Development	3,900	4,600
Subtotal	97,200	119,300
<b>National Special Grants:</b>		
Pest Control Strategies	200	200
Expert IPM Dec. Support Syst.	177	177
Pest Management Alternatives	1,623	1,623
IPM/Biocontrol	2,731	2,731
Minor Crop Pesticide Clearance	8,990	8,990
Pesticide Impact Assessment	1,327	1,327
Minor Use Animal Drugs	550	550
Biological Impact Assessment	254	254
Food Safety	2,000	5,000
Rural Development Centers	423	423
Tropical/Subtropical Agriculture	2,724	2,724
Water Quality	2,461	3,461
Global Change	1,000	1,000
Subtotal	24,460	28,560
<b>State Specific Special Grants</b>	<b>42,083</b>	<b>34,556</b>
<b>Other Research Grants:</b>		
Rangeland Research	475	0
Aquaculture Centers	4,000	4,000
Supplement/Alternative Crops	650	750
Sustainable Agriculture	8,000	8,000
Critical Materials	550	600
Subtotal	13,200	13,350
<b>Federal Administration</b>	<b>11,226</b>	<b>10,688</b>
<b>Grand Total Research</b>	<b>409,910</b>	<b>443,716</b>

We were very pleased that formula funds increased by 7 percent and that NRI funding increased by \$22.1 million (23 percent). These have been the top two priorities for SAES directors for the past few years. The increases in funding for food safety and water quality research also are welcome. ARD encourages faculty members to be even more proactive in submitting proposals for these grant programs. The increased funding available should improve your chances for approval.

## Recognition of Junior Faculty for Excellence in Research

In 1991, the ARD Advisory Council established a program to recognize the research accomplishments of junior faculty members. No more than two junior faculty are recognized each year. The recognition consists of a certificate, engrave plaque and \$3,000 for use in professional development or research-related activities.

Criteria used to evaluate nominees include scientific publication record, especially those publications resulting from research at UNL; external grant funding; and recognition by peers. A subcommittee of the ARD Advisory Council evaluates the nominations and recommends recipients to the Dean for Agricultural Research.

The following faculty members were selected for recognition during the 1998-99 academic year:

**Dr. Thomas G. Franti**, Assistant Professor,  
Biological Systems Engineering

**Dr. Timothy P. Carr**, Assistant Professor,  
Nutritional Science & Dietetics

Congratulations to Drs. Franti and Carr! A call for nominations is issued each year on June 1. We encourage faculty and administrators to nominate deserving junior faculty in their units.

## Success of ARD Faculty in USDA Competitive Grant Programs

Since July 1997, ARD faculty have received 18 major awards from USDA-CSREES competitive grant programs. These awards totaled \$2,556,731. The number of awards received by IANR units are: Agricultural Economics, 1; Agronomy, 3; Animal Science, 2; Veterinary & Biomedical Sciences, 4; Biochemistry, 2; Food Science & Technology, 2; Plant Pathology, 2; NEREC, 1; and SCREC, 1. The names of faculty receiving these awards are published in this issue and previous issues of *ARD News*. ARD congratulates our faculty members on successfully competing for these grants.

The success of our colleagues should encourage all ARD faculty to be proactive in seeking grant funds. A number of programs have been established to aid faculty in grantsmanship efforts. The Associate Vice Chancellor for Research periodically conducts grant-writing workshops and has a staff of writers to assist in final polishing of grant proposals. The ARD office can assist with budget formulation and preparation of assurance statements. We also have a practical publication titled "Playing to Win" that lays out strategies for preparing successful grant proposals. Please contact ARD if you would like a copy of this publication.

## ARD Ranking Among Agricultural Experiment Stations\*

Several unit administrators have requested that ARD publish some information regarding our ranking compared to other state agricultural experiment stations. This is an attempt to summarize some readily available information in the Current Research Information System database. Please keep in mind that Nebraska ranks fourth in farm gate value of crops and livestock (about \$9 billion).

	Rank in the North Central Region	Rank in the U.S.
Number of projects	6	12
Number of SYs	4	10
Total research \$ expended	4	8
Total USDA \$ expended	4	7
Total other federal \$ expended	3	8
Total industry \$ expended	6	8
State appropriated \$ expended	4	8

In general, we rank behind California, Florida, Iowa, Minnesota, New York, North Carolina, Texas, and Wisconsin in several of these areas. California, Florida and Texas have very large research programs. The ARD program is of the same magnitude as those in Iowa, Minnesota, New York, North Carolina and Wisconsin.

\*Data was taken from *Inventory of Agricultural Research Fiscal Year 1996*, Cooperative States Research, Education and Extension Service, USDA, Washington, D.C.

## Internal Search for Director of CRCRD

Sam Cordes has said that he plans to relinquish his role as Director of the Center for Rural Community Revitalization and Development (CRCRD) and return to a faculty role in the Department of Agricultural Economics. We appreciate very much the leadership that Sam has provided to CRCRD and wish him well as he returns to a faculty role following his faculty development leave March 1, 1999.

We are announcing an internal search for the Director of CRCRD in the Institute of Agriculture and Natural Resources (IANR). This is a 25 percent administrative position. We want an individual in this role that has an understanding of rural community issues and creative skills in securing grants to expand the programs in CRCRD. For more information contact Deans

Ken Bolen or Darrell Nelson. We will accept nominations and applications for the position until Jan. 15, 1999. Nominations and applications may be sent to either Dean Bolen in the Cooperative Extension Division or Dean Nelson in the Agricultural Research Division.

## Royalties and the ARD Faculty

At various times in recent years, ARD News has contained articles on patents, the patent process and other intellectual property. Many types of intellectual property, if correctly protected, managed, and marketed, provide income to the university and to the inventors through the collection of royalties. Under the policy of the NU Board of Regents, royalties, after being used to pay direct expenses of the patent, are divided, with one-third going to the inventor(s), one-third to his/her appropriate administrative unit for further research work and one-third to the office of the patent administrator to support further patent efforts. For IANR, the distribution of royalties among the appropriate administrative units is defined as follows: 25 percent to the Vice Chancellor of IANR; 50 percent to the involved division, and 25 percent to the involved department or center. In recent years, the IANR Vice Chancellor's share has come to ARD for royalties originating from research activity. The university patent administrator initially returns the total administrative unit share to the ARD office. ARD then transfers the appropriate share to the involved department or center. The ARD office has normally returned more than the minimum 25 percent to the involved department and in some years has returned 100 percent. This decision is made each year and depends on whether there are additional expenses associated with technology transfer, licensing or related items that need to be paid out of the ARD share.

Royalties can generate funds for future research and provide an incentive for prospective inventors through potential financial remuneration. The IANR philosophy on patents is that they are important only as they contribute to the education, research and public service mission of IANR, and the generation of royalty income for the University and the inventor is not a primary objective of patenting. IANR receives appropriated funds for salaries and operating expenses to carry out the programs. Thus, revenues received from royalties should be viewed as additional support for the programs as well as professional recognition for the inventor and not primarily as a significant source of personal financial compensation. Many patents and other intellectual property never produce any income. However, in recent years, the University has been more proactive in attempting to license and market these technologies, and royalty income has been steadily increasing.

In fiscal year 1997-98, total royalty income returned to ARD for distribution was \$94,453.64, which was the one-third administrative unit share after expenses. That compares to \$89,578.81, the one-third share in FY 1996-97, and \$63,681.13 in FY 1995-96. Similar amounts went to fund the technology-transfer operations of the patent administrator and to the inventors. Since ARD had no direct expenses associated with this area during the 1997-98 fiscal year, the entire administrative unit amount was redistributed to the departments where it originated. The use of these funds within the department/center is at the discretion of that unit and can support research activity that cannot be served through regular finance processes.

There are several valid reasons for protecting intellectual property and managing it well in order to maximize the public benefit. Royalty income, while not the driving force, is an additional benefit and ARD encourages faculty to use the patent system and other appropriate intellectual property protection systems to enhance the impact of outputs from our research programs.

## CRIS Enhancement Project

In 1996, CSREES contracted with the University of Arizona to study the Current Research Information System (CRIS) and recommend changes that would streamline the system and make the database more user friendly. In addition, the system should allow users to more easily identify the ongoing research efforts in contemporary issues such as sustainable agriculture. The recommendations to improve CRIS were transmitted to CSREES in January 1998. Implementation efforts have been underway since that time. The major changes in CRIS that will affect faculty members are:

- Commodity codes are reduced in number and renamed "Subject of Investigation."
- Activity codes were eliminated.
- Research Problem Area (RPA) codes were reduced in number and the need to tie RPAs to commodity and activity codes was eliminated.
- Most "special classification" codes were eliminated.
- Form AD-417 was redesigned to incorporate the changes in taxonomy outlined above.
- Form AD-421 was expanded to allow entry of more information.

- CRIS data entry will be web based.

The new taxonomy will be implemented for new projects and renewal projects effective Jan. 1, 1999. All existing projects will be reclassified during March and April 1999. The ARD office will provide guidance to units as these changes are implemented.

## Professional Workers Directory in Agriculture

The Cooperative State Research, Education, and Extension Service (CSREES) announced the availability of the online Professional Workers Directory in Agriculture last January. The directory is a comprehensive guide to over 35,000 agricultural professionals employed by state research stations, extension offices, and land-grant universities. The future holds great promise for the directory as we hope to deploy the directory "across the system" to serve as the authoritative source of information about scientists and related personnel in cooperating land-grant universities.

For this reason, it is crucial that the faculty and staff at the land-grant institutions access the web-based directory at the address listed and examine their account profile. The address is:

<http://www.pwd.reeusda.gov>

Access this URL on the web and run a copy of your department and/or center. This will enable you to review the faculty within your department/center, make any corrections on the **hard copy** and forward this along with the corrections to Dora Dill in the ARD office. Dora maintains this new on-line directory and can make those changes for you. It is very important that these are kept as accurate as possible. We have heard from several units since the letter of Aug. was sent to unit administrators; but others need to run a copy, review the faculty, make any corrections and forward them to the ARD office.

## Proposals Submitted for Federal Grants

Here is a list of proposals that were submitted after September 1998 by faculty for federal grant programs. While not all grants will be funded, we appreciate the faculty members' efforts in submitting proposals to the various agencies.

**Daniel Pomp, Merlyn Nielsen and Dale Van Vleck** — NIH — Fine Mapping of Genes Regulating Heat Loss in Mice — \$897,993

**Ruben Donis** — USDA Plum Island Foreign Animal Disease Center — Classical Swine Fever Virus — \$149,958

**Martin Dickman** — University of California-Davis (BARD) — Redox Climate in Quiescence and Pathogenicity of Post-harvest Fungal Pathogens — \$52,800

**Azzeddine Azzam** — USDA/ERS — Measuring Market Power and Cost-Efficiency Effects of Increased Meat Packing Concentration on Meat Price-Spreads: The Case of Beef and Pork — \$52,729

**Fernando A. Osorio** — USDA/FAS/MSD — Characterization of an Emerging Vesicular Disease that can be Mistaken for Foot-and-Mouth Disease — \$10,000

**John E. Foster** — USDA/ARS — Techniques for Identification, Cryopreservation and Genetic Sexing of the Primary Screwworm — \$14,000

**Vadim Gladyshev** — NIH — Mechanism of Redox Regulation of Cell Signaling — \$1,158,403

**Brian L. Benham and Richard B. Ferguson** — USDA/NRI — Improving Water and Nutrient Management with Subsurface Drip Irrigation — \$303,123

**Shiela S. Scheideler** — U.S. Geological Survey, BRD — To Determine Baseline Values for Bone Size, Ash, and Mineral Accretion and Liver Trace Mineral Accretion in Cranes of Various Ages and Pathological Conditions and Various Categories for Causes of Mortality — \$6,000

**John L. Lundquist and Timothy J. Arkebauer** — USDA/NRI — Influence of Soil Nitrogen Supply on Corn-Velvetleaf Competition — \$213,445

**Nancy M. Betts** — USDA/NRI — Using a Behavior Model to Promote Grain, Vegetable and Fruit Consumption by Young Adults — \$160,818

**Timothy P. Carr** — USDA/NRI — Anti-Atherogenic Properties and Regulatory Mechanisms of Dietary Stearic Acid — \$240,060

## New or Revised Projects

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

### NEB-11-079 (Biological Systems Engineering) Agricultural Tractor Testing Board: Policies and Procedures

*Investigator:* Leonard Bashford

*Status:* Revised Hatch project effective July 1, 1998

### NEB-13-144 (Animal Science) Utilization of Phosphorus in Cool- and Warm-Season Grass Hay by Ruminants

*Investigator:* Dennis R. Brink

*Status:* New Hatch project effective Sept. 4, 1998

### NEB-14-009 (Veterinary & Biomedical Sciences) Enteric Diseases of Swine and Cattle: Prevention, Control and Food Safety

*Investigator:* Rodney A. Moxley

*Status:* Revised Hatch project that contributes to NC-62 effective Oct. 1, 1997

### NEB-15-086 (Biochemistry) B12 Enzymes and Hyperhomocysteinemia

*Investigator:* Ruma Banerjee

*Status:* New Hatch project effective Sept. 4, 1998

### NEB-21-040 (Plant Pathology) DNA Replication and Gene Expression of Chlorella Viruses

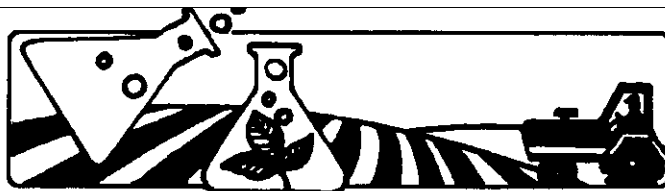
*Investigator:* James L. VanEtten

*Status:* Revised Hatch project effective May 4, 1998

### NEB-91-043 (Nutritional Science & Dietetics) Role of N-3/N-6 Polyunsaturated Fatty Acids in Health Maintenance

*Investigator:* Nancy M. Lewis

*Status:* Revised Hatch project that contributes to NC-167 effective Oct. 1, 1997



## Grants and Contracts Received October and November, 1998

<b>Agricultural Economics</b>	
Azzam, Azzeddine — USDA/ERS	57,729
<b>Agronomy</b>	
Andrews, David — INTSORMIL	42,000
Baenziger, Steve — USDA/ARS	34,145
Baltensperger, David and Nelson, Lenis — Pioneer Hi-Bred International	19,970
Graef, George — Smith Bucklin & Associates	32,697
Maranville, Jerry — Pioneer International	20,000
Maranville, Jerry — INTSORMIL	19,600
Mason, Steve — INTSORMIL	23,450
Miscellaneous grants under \$10,000 each	47,077
<b>Animal Science</b>	
Scheideler, Sheila — Waldbaum Company	86,400
Miscellaneous grants under \$10,000 each	42,196
<b>Entomology</b>	
Foster, John — USDA/ARS	60,000
Foster, John — USDA/ARS	14,000
Miscellaneous grants under \$10,000 each	45,050
<b>Food Science &amp; Technology</b>	
Bullerman, Lloyd — Ohio State University	15,000
Jackson, David — Ohio State University	15,000
McKee, Shelly — Waldbaum	72,521
Meagher, Michael — Anonymous	131,084
Meagher, Michael — Anonymous	59,000
Miscellaneous grants under \$10,000 each	149
<b>Horticulture</b>	
Coyne, Dermot — Bean/Cowpea CRSP-Michigan State University	83,325
Miscellaneous grants under \$10,000 each	38,450
<b>Panhandle Research &amp; Extension Center</b>	
Miscellaneous grants under \$10,000 each	30,100
<b>Plant Pathology</b>	
Powers, Thomas — NSF	52,515
Powers, Thomas and Szalanski, Allen — USDA/CSREES	84,814
<b>School of Natural Resources</b>	
Hergenrader, Gary — Natural Resources Conservation Service	33,000
Hubbard, Ken — Desert Research Institute	18,750
Savidge, Julie — USDA/FS	20,000
Verma, Shashi and Blad, Blaine — DOE/NIGEC	1,229,893
Volk, Bob — USDA/ARS	58,240
Wedin, David — University of Minnesota	27,352
Wilhite, Donald — USDA/CSREES	18,518
Miscellaneous grants under \$10,000 each	10,502
<b>South Central Research &amp; Extension Center</b>	
Miscellaneous grants under \$10,000 each	21,700
<b>Veterinary &amp; Biomedical Sciences</b>	
Brodersen, Bruce — National Pork Producers Assn.	23,480
Donis, Ruben — USDA/CSREES	149,958
Osorio, Fernando A. — USDA/FAS	10,000
Miscellaneous grants under \$10,000 each	18,254
<b>West Central Research &amp; Extension Center</b>	
Campbell, John — USDA/ARS	45,000
Miscellaneous grants under \$10,000 each	35,621
<b>Grand Total</b>	<b>2,846,540</b>

## Diane says

The school of affliction graduates rare scholars.