University of Nebraska-Lincoln Agricultural Research Division 121st Annual Report. July 1, 2006 to June 30, 2007.

Institute of Agriculture and Natural Resources

University of Nebraska Lincoln

UNIVERSITY OF NEBRASKA-LINCOLN

AGRICULTURAL RESEARCH DIVISION

121ST ANNUAL REPORT

JULY 1, 2006 TO JUNE 30, 2007

INSTITUTE OF AGRICULTURE AND NATURAL RESOURCES

IANR

Agricultural Research Division scientists improve the quality of life for Nebraskans across the state. They make important contributions to the state's agriculture, food industries, environment, the well-being of families and community development. Research occurs in fields, feedlots, the natural environment, homes, yards, gardens, and cities and towns. ARD scientists provide new knowledge and seek answers to Nebraskans' problems and concerns.

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Our Mission

The mission of the Agricultural Research Division in the Institute of Agriculture and Natural Resources at the University of Nebraska-Lincoln is to conduct problem-solving and fundamental research that addresses priority issues facing Nebraska's agricultural and food industries; provides the knowledge base essential for managing our natural resources; promotes family well-being and community development; and educates future scientists through hands-on experiences.

Foreword


Gary L. Cunningham

The 121st Annual Report of the University of Nebraska–Lincoln Agricultural Research Division (ARD) is one of our ways of communicating what we do and informing the citizens of Nebraska about the work our faculty does on their behalf with their financial support through the University of Nebraska, federal and state agencies, and industry grants and gifts. FY 2007 ARD faculty accomplishments that provide knowledge to support agriculture, agribusiness, natural resources, and human well-being in Nebraska are highlighted. The report documents ARD's successes in developing new knowledge and technologies to improve profitability, better manage natural resources, enhance environmental quality, and improve the quality of all our lives.

In addition to research accomplishments and impacts, this year's report includes listings of faculty, research projects, faculty and student awards and honors, research outputs and the ARD financial report for the period July 1, 2006, to June 30, 2007. This year, we are also pleased to report on some major new facilities that will help ARD serve Nebraskans even more effectively in the future and on studies we are using to help us plan our future work more effectively. I hope this report adequately conveys the breadth of ARD's research work from the adaptational and applied research required to meet today's needs to the basic and fundamental research that will help serve Nebraska's future.

This report was compiled in accordance with the intent of the law of the State of Nebraska that established the Nebraska Agricultural Experiment Station on March 31, 1887.

The Research Highlights section of this Annual Report provides more detail on accomplishments from a set of selected research programs such as:

- Improved irrigation efficiency for soybeans
- Biology of sandhill rangelands
- Infrared cameras for water management research
- Tending tendons with ultrasound
- New resources for feedlot research
- Nebraskans retiring survey
- Immune systems to help protect crops from disease
- New leadership for drought center
- Bioenergy crops in the Midwest
- Milk can block bacteria infection
- Improved herbicide resistance
- New insights into tillage management
- New software to assess biofuel plants
- Read allergen labels carefully

Gary L. Cunningham
Dean and Director
Agricultural Research Division

The Agricultural Research Division is the only public entity in Nebraska charged with conducting agricultural research. It is part of a national network of state agricultural experiment stations located in land-grant universities across the United States. In 1973, the state legislature passed LB 149, which established the Institute of Agriculture and Natural Resources. The Agricultural Research Division was created as one of IANR's six divisions. The state legislation also expanded the federal mandate for agricultural research conducted by the Nebraska Experiment Station to include research in natural resources, human resources and family sciences. The ARD research portfolio represents a scientific investment in Nebraska's future. ARD research not only solves today's problems, it also defines tomorrow's opportunities.

New approach delays soybean irrigation

UNL scientists are developing a new approach that delays soybean irrigation until early pod formation in July, relying on stored soil moisture and early-season rainfalls while still helping produce high yields.

Researchers have tested the approach on University plots the last two growing seasons and plan to try it on a half dozen or so Nebraska farmers' fields in 2008.

The project builds on years of research into soybeans' drought resistance and the best methods of irrigation. About 50 percent of Nebraska soybeans are irrigated.

Typically, producers plant soybeans in early May and begin irrigating in June. In years with average or above-average early-season rainfall, that can result in too much water being applied to plants.

Too much moisture can result in taller and leafier soybean plants that can lodge later and are more susceptible to disease. Avoiding too much early irrigation, on the other hand, encourages soybean plants to develop stronger, healthier root systems that grow deeper in search of moisture.

In most years there's enough stored moisture and enough rainfall to get soybeans through the early weeks of growth.

On average, soybeans grown with deferred irrigation on University plots in 2006 yielded about 83 bushels an acre, slightly more than the 78 bushels yielded under a season-long irrigation approach. Similar results were recorded in 2007.

Those results are particularly impressive given the drought conditions that prevailed on East Campus plots in June and July.

Soybeans need about 19 inches of water from planting in early May to harvest to yield about 85 bushels. If they don't get any of that from early-season rains, producers will have to catch up with irrigation once deferred irrigation begins in early July. But if early-season rains are normal, the deferred approach could reduce the amount of irrigation water applied throughout the season.

After the approach is tested in farmers' fields in 2008, UNL hopes to develop computer tools through UNL Extension that will help producers improve their irrigation timing to achieve high yields with a more efficient strategy.

In most years, young soybean plants, don't need to be irrigated until early pod formation in July.

Sandhills more stable than once thought

Two years after removing the vegetation from several Sandhills dunes, UNL researchers started seeing signs of erosion.

That indicates the dunes may be a lot more stable than once thought.

The finding came as a team of UNL researchers studied the history of grassland destabilization and how long- and

A UNL team studied how long- and short-term climate changes might affect the stability of the Nebraska Sandhills.

short-term climate changes might affect the Sandhills' stability.

Conducted on about 30 acres of the former Barta Brothers Ranch near Rose, a 6,000-acre Sandhills ranch donated to UNL in 1996 by brothers Jim and Clifford Barta, the research began with creation of 10 circular plots, each somewhat larger than a football field. Researchers used herbicide to kill all the vegetation on several of them.

The plots continued to be treated with herbicide and kept free of vegetation for one to two years. Researchers monitored such information as the coverage of live and dead plants, root mass, organic matter in the soil and sand movement to determine stability of the plots.

The results indicated the Sandhills may be more stable than previously believed. Vegetation was allowed to return to one set of plots initially treated with herbicide after one year. These plots showed a large amount of weed growth, but no soil erosion.

While the research made significant progress in studying the balance between soil, vegetation and water in the Sandhills, additional study is needed to determine what happens when sand dunes begin to erode, or become mobile.

The ongoing research, part of the Sandhills Biocomplexity Project, a $1.8 million National Science Foundation-funded project, is designed to study what would happen to the Sandhills if something such as climate change caused a loss of vegetation on the sand dunes.

Another goal of the biocomplexity project is to lay groundwork and infrastructure for future UNL studies in the Sandhills.

Advanced infrared camera could expand hydrology research

An advanced infrared camera that can see thermal contrasts as small as two-tenths of a degree Fahrenheit has the potential to greatly expand water and environmental research being done by UNL.

The camera will allow closer examination of Nebraska's unique hydrology. Looking little different than a handheld digital video recorder, the camera is the latest weapon in an already high-tech arsenal used by UNL's Center for Advanced Land Management Information Technologies to produce real-time, remote-sensing data used by researchers on a wide variety of projects.

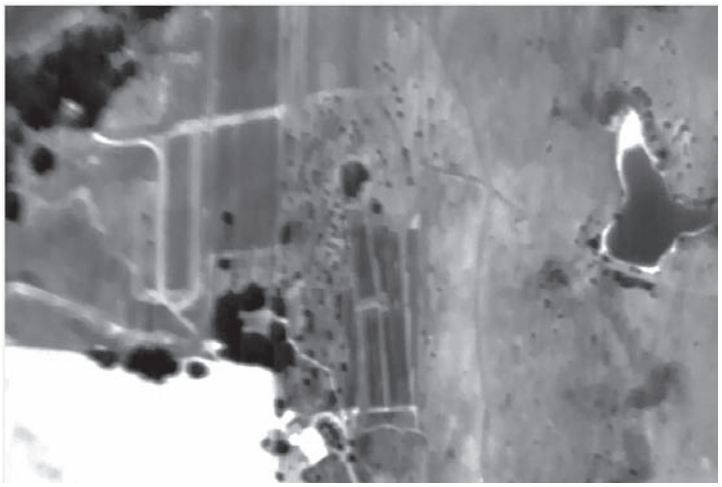
Though infrared cameras are not new, the ThermaCAM-SC640 has imaging capabilities far advanced of mainstream infrared cameras typically used by law enforcement or the military. It can see differences in thermal images in the 7.5 to 13 micron range, which means it is more useable for most earth science research purposes.

The camera is often used with other data collection equipment mounted on a single-engine Piper Saratoga aircraft operated by CALMIT researchers and staff.

Its sensitivity, coupled with the high resolution of the images produced by the camera, should make it possible to identify where groundwater discharges into a stream or other body of surface water, for example.

Used either by itself, or in conjunction with other sensors the aircraft can carry, the new camera allows for the preparation of high-resolution temperature maps useful in many water and earth science research projects.

Currently, the camera is being used to study groundwater flow through lakes, such as Crescent Lake in Garden County, alkali lakes in Sheridan County, toxic algae blooms in Dodge County, outcrops of the Ogallala aquifer and the canopies of wetlands in Garden County and to study sub-irrigated meadows near Whitman.



An advanced infrared camera produces real-time, remote-sensing data for water and environmental research.

Greg Bashford, University of Nebraska–Lincoln biomedical engineer, conducts an ultrasound on a tendon. Bashford is part of a research team developing a new approach to measuring tendon injury.

Tending tendons using ultrasound

A UNL biomedical engineer is developing a new approach to measuring human tendon injury that could lead to earlier detection and improved treatment.

The scientist, working with colleagues at the University of Southern California and Madonna Rehabilitation Hospital in Lincoln, is trying to improve early detection of tendon degeneration due to age, overuse or a systemic disease known as tendinosis. The condition can strike tendons in both the legs and arms.

Typically, magnetic resonance imaging is used to assess potential tendon injury, but that process is expensive and cannot determine the degree and stage of injury. Scientists set out to see if ultrasound, a more cost-effective procedure, could determine the existence of tendon injury even before there's pain and also measure its severity.

They gathered about 1,000 ultrasound images of selected tendons in the legs of 40 subjects in California and Lincoln — 10 with no known tendon injury, 10 with suspected tendon injury, 10 runners susceptible to tendon injury and 10 individuals with spinal cord injuries whose leg use is minimal.

Analysis of the ultrasound images with different software approaches determined with more than 80 percent accuracy whether the subject had sustained injury to the tendon, resulting in tendinosis.

Ultrasound images of healthy tendons show tissue organized in parallel bundles. Images of damaged tendon show bundles that are disorganized with, in some cases, thicker sections of tissue.

These findings could have important ramifications for patients dealing with tendon damage. Earlier detection allows for greater success with therapy rather than relying on surgery.

IANR, cattle feeders are partners in cattle research

A $1.1-million expansion and improvement project at the UNL Research Feedlot north of Scottsbluff is the fruit of a vital partnership between the university and cattle feeders, a major sector of Nebraska's largest industry.

Dedicated in May, the expansion and other improvements will enable the feedlot to conduct precision research into the most important questions facing livestock feeders. The feedlot's location ensures that research is carried out in the same real-world conditions faced by livestock producers in the Northern Plains.

The project, begun in 2003, received significant support from the region's feeding industry; much of the funding for the expansion and improvements came from private donors, some of it through the University of Nebraska Foundation.

The project added 61 new pens to the existing 44 pens. In addition, improvements were made to the cattle handling facilities, including a state-of-the-art squeeze chute and scale. Also in the works are a micro-nutrient machine, additional grain storage and new working facilities. The new pens are of uniform size, shape and slope. Feed bunk space and availability are uniform. This will improve the consistency from pen to pen.

The processing facilities use Individual Electronic Identification. Each animal has an electronic ear tag that is scanned directly to a database. The electronic scale weighs animals and a sophisticated computerized system records the data. This way, performance data for each animal is tracked electronically. Researchers can monitor each animal's performance and, when necessary, trace back individual animals.

Also, water intake to each pen can be measured independently. UNL's Panhandle Research Feedlot may be the nation's largest research feedlot with capabilities for individual pen water intake measurements. This uniformity will provide greater precision.

The expansion of the UNL research feedlot north of Scottsbluff is the result of a partnership between the University and cattle feeders.

Rural Nebraskans not retiring type

Worries about health care loom over rural Nebraskans' retirement dreams – even for those who are decades away from their golden years, the Nebraska Rural Poll shows.

The poll also found that more than half of rural Nebraskans think the ideal retirement age is somewhere between 55 and 64, but most don't expect to retire that soon. Even when they do retire, the poll shows, many rural Nebraskans expect to continue working in some fashion, some because they need to for basic income or health insurance, but others because they want to remain active.

The 12th annual poll asked 6,400 residents of Nebraska's 84 rural counties a number of questions about retirement plans, including a dozen focusing on health care. Results are based on 2,680 responses.

Eighty-six percent of respondents cited health care as an important retirement issue.

Concern about health in retirement was reflected elsewhere in the poll. Seventy-four percent of respondents cited proximity to health care as a factor in their decisions on where to live in retirement. Fifty percent said availability of assisted-living facilities is an important consideration in deciding where to live.

Health care also is a factor driving rural Nebraskans to continue working past retirement age, with 34 percent citing it as a reason. However, health care ranks below other reasons for working, including meeting basic income needs and keeping mentally and physically active.

About 55 percent of respondents said 55-64 was an ideal retirement age, with nearly 30 percent saying 65-70. But only one-third who endorsed a younger retirement age expect to have enough income to retire that early.

Sixty-nine percent of respondents expressed concern about having enough income in retirement. Younger respondents actually are more worried about outliving their income than older respondents, the poll shows.

About 40 percent of rural Nebraskans expect to continue working after they retire, according to the poll.

In another key Rural Poll finding, only about 10 percent of rural Nebraskans plan to leave the state when they retire, but many are uncertain of their plans.

New components of plant immunity being identified

A UNL plant scientist's discovery of a previously unknown component in plants' immune systems provides new clues to how plants and humans fend off diseases and how invaders stifle immunity.

The work stems from the researcher's discovery of a protein toxin in a plant pathogen that's also found in several animal pathogens, including those that cause diphtheria and cholera.

As different as they are, plants and animals share some of the same molecular components to defend themselves against outside invaders.

The research focuses on a method of infection found in animal and plant pathogens called a type III protein secretion system. To infect a plant, pathogens inject up to 30 proteins into plant cells using this system, which resembles a kind of microscopic syringe. Once inside, the toxic mix of proteins acts like a burglar, cutting wires to a home's alarm system, disabling the defense system from calling for reinforcements and allowing the intruders to enter unimpeded.

The UNL team found that one of the proteins – HopU1 – disrupts the plant's immune system when the disease-causing bacterium *Pseudomonas syringae* injects it into a plant. This disruption helps the pathogen infect its plant host. Researchers found that HopU1 is a type of enzymatic protein – an ADP-ribosyltransferase that had never before been found in plant pathogens. This type of protein is also found in organisms that cause human diseases such as cholera and diphtheria.

Research by James Alfano and other UNL plant scientists is providing new clues about plant immunity and could lead to a better understanding of how both plants and animals defend themselves against disease.

After identifying HopU1 as one of the injected proteins, the scientists began studying which plant components this virulence protein targets. That's key to identifying new components of plant immunity.

The team discovered that HopU1 modifies RNA-binding proteins. Their work suggests that the pathogen disrupts plant immunity by suppressing immunity-related RNA metabolism – part of the process that turns a plant's DNA code into proteins to help fight off infection. A plant lacking one of the HopU1 targets is more susceptible to the pathogen. These RNA-binding proteins, also found in animals, were not previously known to be part of plants' or animals' immune systems.

UNL-based Drought Mitigation Center has new leadership

The UNL-based National Drought Mitigation Center has new leadership.

Longtime climatologist Mike Hayes assumed the position in August. Hayes, who had been with the center since its inception more than 10 years ago, replaced NDMC founding director Don Wilhite, who became director of UNL's School of Natural Resources.

Hayes began at the NDMC as a climate impacts specialist and was promoted to associate director of the center in 2006.

Over its history, NDMC has been directly and indirectly involved with drought planning efforts at state, tribal and local levels, with a result that overall preparedness for dealing with droughts has improved worldwide.

Mitigation is the process of planning before the onset of drought to reduce vulnerability to it, rather than response, which tends to be more expensive. In addition to working with governments on drought planning, the NDMC was a founding partner in the widely published U.S. Drought Monitor.

Recent partnering with the U.S. Department of Agriculture's Risk Management Agency has enabled other research expansion, such as the satellite-based Vegetation Drought Response Index and the related Vegetation Outlook, the Drought Impact Reporter and Risk Reduction for Ranchers. The center also is developing methods for quantifying economic impacts of drought and the Drought Atlas and Decision Support System.

NDMC also conducts research with sponsors such as the National Aeronautic and Space Administration, National Oceanic and Atmospheric Administration and other agencies within the U.S. Department of Agriculture.

Medical, animal researchers to collaborate

UNL's Agricultural Research Division is partnering with the University of Nebraska Medical Center and other collaborators on developing research and educational opportunities that bridge human and animal health.

Don Beermann, former head of UNL's Department of Animal Science, was named to coordinate the One Health Initiative. Beermann also was named director of the Institutional Animal Care Program in the Office of the Vice Chancellor for Research.

Beermann will be responsible for providing professional direction for the care and use of animals in research and teaching within UNL facilities, and he will administer the UNL program for laboratory animal care and housing.

The appointment capitalizes on Beermann's background as an animal science administrator, researcher and educator, as well as his ongoing interest in relating human and animal physiology.

Beermann assumed both positions Aug. 1.

NORTH CENTRAL BIOECONOMY CONSORTIUM

Focusing on bioenergy crops in the Midwest

Nebraska, along with 12 other north central region states, has the potential to produce one-half to two-thirds of the nation's perennial bioenergy crops and crop residues. This puts the region in the national spotlight as Congress considers federal farm policy that will help shift the country's energy reliance from the Mideast to the Midwest.

The North Central Bioeconomy Consortium, or NCBEC, a 12-state collaborative effort of the directors of the Departments of Agriculture, Cooperative Extension Services and University Agricultural Experiment Stations, unveiled plans in 2007 to help guide this transition by coordinating policy and research in the region.

In addition to Nebraska, states involved in NCBEC include: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, North Dakota, Ohio, South Dakota and Wisconsin.

The NCBEC received a $100,000 grant from the Energy Foundation of San Francisco to coordinate regional public policy development and research for a renewable energy future. A strategic partnership has been formed with the Great Plains Institute of Minneapolis, Minn., to assist in coordination, facilitation and implementation of the 12-state consortium agenda.

Carbohydrates can block bacteria

Certain carbohydrates found naturally in milk can help prevent harmful bacteria from settling in the gastrointestinal tract and causing disease, UNL research shows.

The carbohydrates, known as galactooligosaccharides or GOS, are structurally similar to the sugars that line cells inside the GI tract and to which bacteria attach. The research showed the bacteria can be "fooled" into attaching instead to the GOS and then be flushed through the intestinal tract without it sticking around.

The galactooligosaccharides reduced the adherence of the bacteria by about 70 percent in the research.

Oligosaccharides already were known to stimulate growth of healthy bacteria in the gastrointestinal tract, but this is the first research to show their potential usefulness as a decoy for the harmful bacteria.

The research was done using enteropathogenic E. coli, which causes diarrheal diseases in children, but preliminary data suggest the well-known *E. coli* O157:H7 is similarly affected by the approach.

Galactooligosaccharides occur naturally in cow and human milk. This may offer partial explanation for why nursed babies don't get as many gastrointestinal infections as formula-fed infants. GOS can be developed into a food ingredient made from milk sugars, which means infant formula manufacturers could add them to their products.

Galactooligosaccharides

already are added to many foods made in Asia and Europe, including dairy foods, granola bars, crackers and breakfast cereals.

The research has been done with tissue cell cultures so far. Further research will test the approach on animals.

Developing dicamba-resistant broadleaf crops

In a project that began about a dozen years ago, UNL scientists discovered a gene that has been used to create broadleaf crops that tolerate spraying with the popular herbicide dicamba.

Now, even as an industry partner is working to bring dicamba-resistant crops to market, these plant scientists are continuing to explore new and expanded uses for the technology they discovered.

The availability of dicamba-resistant crops means that farmers eventually will have more options for controlling weeds in broadleaf crops such as soybeans, canola, cotton, tobacco and vegetables.

Dicamba-based herbicides, sold under trade names such as Banvil and Clarity, are relatively inexpensive and easy on the environment because the chemical disappears quickly in plants and soil. But like all broadleaf herbicides, dicamba kills broadleaf crops as well as their weedy cousins so its use presently is limited to corn and other grassy crops.

The UNL team identified soil bacteria that break down dicamba and isolated the gene responsible for imparting resistance. The gene was inserted into a plant's chromosomes, successfully transferring dicamba resistance to the plant.

Researchers also discovered they could modify the gene to target the DNA of the plant chloroplast, where photosynthesis occurs. This approach has significant practical implications. Since chloroplast genes are inherited through the maternal side, not through male pollen, it eliminates the chance that resistance could inadvertently spread to other plants through pollen.

Two rows of soybean plants are shown eight days after they were sprayed with dicamba. The plants on the left, which contain the dicamba-resistant gene, are thriving. The plants on the right died.

The team's genetic modification technique has worked in both lab and field trials. For example, soybeans carrying the dicamba-resistant gene were unharmed by dicamba sprayed at a rate of 2.5 pounds per acre, about 10 times the normal application rate.

UNL has patented this technology. In 2005 UNL signed an exclusive licensing agreement with Monsanto Co. to develop crops tolerant to dicamba, using UNL's technology.

Meantime, UNL researchers are testing this approach on other crops and expect further developments.

IANR returns 15 to 1 benefit for each tax dollar

The Institute of Agriculture and Natural Resources at the University of Nebraska–Lincoln annually returns at least $15 in benefits to Nebraskans for every dollar of state support, making it "a primary engine for economic and social sustainability," a 2007 study says.

The study, by Battelle of Columbus, Ohio, was commissioned to capture the benefits of IANR's teaching, research and extension work in Nebraska and to provide solid guidance for setting future priorities. Results are published in the "At Work for Nebraska" study (*atworkfornebraska.unl.edu*)

The study notes a recent finding by the Nebraska Policy Institute that agriculture and agribusiness account for nearly one-third of the state's jobs – up from 25 percent in 1990. As the University's primary arm dedicated to "sustaining, growing and improving agriculture and agri-

culture-related enterprise in the state," IANR "is key to the long-term competitive sustainability of Nebraska's high standard of living," Battelle said in the report's executive summary.

Battelle did not investigate the economic impact of every research and extension program at IANR – hundreds are under way at any one time – but it did delve into a few projects, focusing on IANR's mission areas of agriculture, food production and natural resource systems; nutrition, health and food safety; environmental sustainability; community and entrepreneurial development; building strong families; and youth development.

The "At Work for Nebraska" report captures the economic impact of IANR programs. It points out that the state's investment in IANR pays off many times over – conservatively estimated at 15 to 1. For example, IANR received $71.6 million in state funds in the 2005 fiscal year. Here's what taxpayers got in return:

– More than $750 million in annual benefits from the institute's research, teaching and extension activities. That's measured in improved economic output and savings – in other words, real money in real Nebraskans' pockets.

– About $338 million in annual benefits through the economic ripple effects of IANR doing business in Nebraska – paying employees, buying products and supplies and having that money multiply throughout the state's economy.

Research studies effect of one-time tillage on no-till

A team of IANR scientists found conducting a one-time tillage does not necessarily destroy the agronomic and environmental benefits gained by continuous no-till, but still recommends avoiding the practice in most cases.

While many U.S. farmers use continuous no-till when growing crops year to year, some caution a one-time tillage would destroy the soil quality gained by no-till farming.

Using no-till farming can increase yield, reduce erosion, improve soil quality and reduce cost and time requirements due to fewer field operations. However, some farmers may want to till for such problems as difficult weeds, compacted soil or to reduce the risk of phosphorus loss.

While the scientists found the one-time tillage did not reduce soil organic matter, soil physical properties and yield, it did not have a positive effect on soil properties or yield. One time-tillage also reduced the risk of phosphorus runoff. Research is continuing to determine if carbon sequestration and soil organic matter will eventually be increased.

With that, scientists say a one-time tillage, conducted once in 10 or more years, might be justified to correct a problem in the field, but otherwise should be avoided unless the ongoing research finds a significant impact on the potential for carbon sequestration and increasing soil organic matter.

Scientists found there was not a significant increase in carbon dioxide emission from the soil with tillage, compared with continuous no-till, and that tillage treatments did not affect soil microorganisms, grain yields or soil aggregate stability.

Researchers also found that nutrients and soil organic matter were well redistributed with plow tillage to reduce stratification of available nutrients, but disk and chisel tillage did not effectively redistribute nutrients.

This research received funding from the International Sorghum and Millet Collaborative Research Support Program, or INTSORMIL.

These research findings were published in three papers in the 2007 July issue of Agronomy Journal.

IANR scientists have found that one-time tillage on no-till farmland **might be justified to correct a problem in the field but otherwise** should be avoided.

A new tool from the UNL agricultural scientists will enable ethanol plants, like this one at Fairmont, to measure their greenhouse gas mitigation and **energy efficiency.**

New software analyzes biofuel

Biofuel production promises to reduce oil imports, turn crops into energy, grow rural economies and decrease greenhouse gas emissions.

It's a tall order. Determining how individual biofuel plants and their grain supply measure up is critical to the burgeoning industry's long-term success.

In 2007, UNL agricultural researchers unveiled a tool to assess plant performance. Their Biofuel Energy Systems Simulator (BESS) software analyzes total energy yield and efficiency, greenhouse gas emissions and resource requirements for biofuel production systems – from seed to biofuel and byproducts.

Quantifying the environmental impact of individual biofuel systems has environmental, economic and public policy implications. To meet emerging renewable fuel standards or to participate in the growing carbon credit market, plants will have to document their environmental performance.

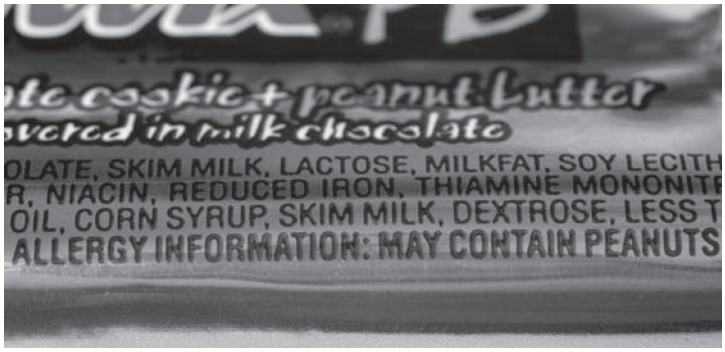
The user-friendly software is backed by complex modeling tools and extensive scientific data. Users can customize data unique to their operation or explore different scenarios. BESS estimates net energy efficiency and net greenhouse gas emissions for each production component and the whole system. It's more flexible and customizable than existing energy and emissions models.

Researchers envision versions for soybean biodiesel and biomass ethanol production from switchgrass and corn stover.

The free software is available at www.bess.unl.edu.

Take 'may contain food allergen' labels seriously

While more and more foods are bearing alert labels, cautioning consumers the products might accidentally contain an allergen, the new labels, such as those that say may contain peanuts, also may be creating confusion for the people they are intended to help.



Food allergies affect 6 percent to 8 percent of infants and young children and 3.5 percent to 4 percent of adults in the U.S.

Since avoiding allergenic food is the primary approach for preventing an allergic reaction, these consumers have become avid ingredient readers.

Law requires foods with highly allergenic ingredients such as peanuts, soy or milk to be disclosed in plain language.

However, alert labels are voluntary and variable. Alert labels indicate the possible presence of allergens from shared processing operations such as the use of shared equipment or facilities.

These labels, for example, may say: manufactured on equipment with peanuts, manufactured in the same facility with peanuts or may contain peanuts.

To determine whether consumers with food allergies heeded these warning labels, ARD food scientists and scientists at the Food Allergy and Anaphylaxis Network conducted consumer surveys and analyzed food products bearing advisory statements regarding peanuts.

Of the 179 products that bore a variety of alert statements for peanuts, 7 percent did contain peanuts.

Peanuts were in 2 of 51 foods that bore a "may contain" statement and 7 of 68 labeled "made in the same facility."

Consumer surveys found that consumers increasingly are ignoring advisory labeling. While a consumer may encounter a product that contains peanuts only one out of 100 times, it's still something to be taken seriously.

Scientists hope this research will lead the Food and Drug Administration to establish thresholds and better educate the public about alert statements.

Additional support for this research was provided by the Food Allergy Research and Resource Program, the Food Allergy and Anaphylaxis Network and Mt. Sinai School of Medicine.

Late supplemental nutrition produces heftier heifers

Spring-calving beef cows that receive supplemental nutrition late in pregnancy tend to produce heftier heifers that have improved pregnancy rates later, IANR research shows.

A three-year study, conducted at the University's Gudmundsen Sandhills Laboratory near Whitman, is the first research to demonstrate the impact of late-gestation nutrition on the performance and subsequent reproductive efficiency of heifer calves. The research grew out of an earlier study that focused on decreasing input costs by testing two management practices: early weaning of the cows to improve their body condition headed into winter and feeding a protein supplement to help provide extra nourishment at a time when the dormant Sandhills range falls short of their needs.

Neither practice improved the cows' future pregnancy rates.

IANR researchers decided to follow the progress of the calves produced by these late-supplemented cows. They found that calves from cows that received late supplements were about 60 pounds heavier.

In a subsequent study evaluating late-gestation supplementation, it was found:

– Eighty-eight percent of heifers from cows that received a protein supplement late in pregnancy achieved first-service pregnancy, compared with just 45 percent of those from cows receiving no supplement.

– Ninety-four percent of heifers from supplemented cows eventually became pregnant, compared with 73 percent of those from nonsupplemented cows.

– Heifers from supplemented cows calved eight days earlier on average and had fewer calving problems (69 percent unassisted births, compared with 38 percent for heifers from nonsupplemented cows).

The supplemented group received about 1 pound of a 42 percent crude protein supplement per head per day from Dec. 1 to Feb. 28. Calves whose mothers receive supplemental nutrition late in pregnancy may be born heavier and, ultimately, have improved pregnancy rates.

Calves whose mothers receive supplemental nutrition late in pregnancy may be born heavier and, ultimately, have improved pregnancy rates.

Faculty Awards and Recognitions

The impact and quality of ARD research can be assessed in many ways. One measure of excellence is the recognition researchers' work receives from peers and from those who benefit from the research. A number of ARD faculty members are widely recognized as leaders in their disciplines, and a number received international, national, regional and/or state honors.

Many ARD faculty also serve as officers or directors in their professional societies and state, regional, national and international organizations. Some are editors and associate editors of professional journals. We applaud their efforts in furthering the knowledge and professionalism of their disciplines.

Agricultural Economics

Konstantinos Giannakas received the Graduate Student Organization Faculty Award from the Graduate Student Organization.

Ronald Hanson was awarded the UNL Academy of Distinguished Teachers Award from University of Nebraska Administration and Faculty Academy Members, and the Gamma Sigma Delta Award of Merit given by Gamma Sigma Delta.

H. Douglas Jose received the Excellence in Team Programming Award from the University of Nebraska.

Agronomy and Horticulture

Mark Bernards received the Certificate of Merit for Extension Publication from the American Society of Agronomy, A-4 Division.

Kenneth Cassman received the Carl Sprengel Agronomic Research Award from the American Society of Agronomy.

Achim Dobermann received the Fellow Award from the Soil Science Society of America and the Researcher of the Year Award from the Fluid Fertilizer Foundation.

Charles Francis received the Bentley Lecture in Sustainable Agriculture Award from the University of Alberta, Edmonton, Alberta, Canada.

Roch Gaussoin was awarded Certificates of Merit for Extension Publications 16 pages or longer by the American Society of Agronomy; and received the Fellow Award from the Crop Science Society of America.

Alexander Martin received the Senior Faculty Teaching Excellence Award from the Holling Family Award Program for Teaching Excellence and A-4 Certificates of Merit for Extension Publications 16 pages or longer from the American Society of Agronomy.

Stephen Mason received the Fellow Award from the Soil Science Society of America; the Darrell Nelson Award for Outstanding Graduate Student Advising from the Institute of Agriculture and Natural Resources; and the American Society of Agronomy Resident Teaching Award from the American Society of Agronomy.

Dennis McCallister received the Superior Academic Advising Award from the College of Agricultural Sciences and Natural Resources.

Terrance Riordan received the Students Advising Award from the College of Agricultural Sciences and Natural Resources.

Robert Shearman received the USGA Green Section Award from the United States Golf Association and the Sunkist Fiesta Bowl Professor of Agronomy Award from the University of Nebraska Foundation.

James Stubbendieck received a Certificate of Recognition for Contributions to Students from the Parents Association and Teaching Council of the University of Nebraska–Lincoln.

Agricultural Leadership, Education and Communication

James King received a 25 Year Certificate from the Association for Communication Excellence.

Daniel Wheeler was selected to be a Fulbright Senior Scholar by the Fulbright Association in Washington, D.C.

Animal Science

Mary Beck served on the Federation of Animal Science Societies Board of Directors.

Don Beermann served as the Nebraska Sigma Xi President-Elect.

Dennis Brink served as the Nebraska Gamma Sigma Delta Secretary.

Mike Brumm received the Fellow Award from the American Society of Animal Science.

Chris Calkins received the Nebraska Beef Cattle Professor of Animal Science from the Nebraska Cattlemen's Research and Education Foundation, received a Certificate of Recognition for Contributions to Students from the University of Nebraska Parents Association and the University of Nebraska Teaching Council.

Andrea Cupp received the Society for the Study of Reproduction New Investigator Award and the Outstanding Young Researcher Award from the Midwest Section of the American Society of Animal Science.

Galen Erickson received the Wendell Burgher Beef Industry Award from the Institute of Agriculture and Natural Resources.

Calvin Ferrell received the Animal Growth and Development Award from the American Society of Animal Science.

Steve Jones served on the American Meat Science Association Board of Directors.

Terry Klopfenstein received the Livestock Industry Award from the Nebraska Corn Board.

Rick Koelsch received the Blue Ribbon Award from the American Society of Agricultural and Biological Engineers, the Presidential Citation from the American Society of Agricultural and Biological Engineers and the Standards Development Award from the American Society of Agricultural and Biological Engineers.

Paul Kononoff was inducted into membership in the University of Nebraska Chapter of Sigma Xi.

Merlyn Nielsen was named the Kermit Wagner Professor of Animal Science by the University of Nebraska–Lincoln and is serving as the President-Elect of the Midwest Section of American Society of Animal Science.

Sheila Scheideler received the Lancaster County Heart of 4-H Volunteer Award from Lancaster County Extension.

Dale Van Vleck received the Distinguished Achievement in Agriculture Award from International Gamma Sigma Delta and was recipient of a symposium held in his honor to recognize his career and accomplishments.

Biochemistry

Hwa-Young Kim received the Young Investigator Award at the International Symposium on Selenium in Biology and Medicine.

Sergey Novoselov received the Young Investigator Award at the International Symposium on Selenium in Biology and Medicine.

Stephen Ragsdale received the Fellow Award of the American Academy of Microbiology.

Melanie Simpson received the Junior Faculty Award for Excellence in Research from the University of Nebraska Agricultural Research Division.

Madhavan Soundararajan received the Teaching Award of Merit from the North American Colleges and Teachers of Agriculture and the University of Nebraska College of Agricultural Sciences and Natural Resources.

Donald Weeks received the Outstanding Scientist Award from Sigma Xi, University of Nebraska.

Biological Systems Engineering

Gregory Bashford received the Dinsdale Faculty Award from the Institute of Agriculture and Natural Resources; the Bright Lights Educator Appreciation Award; and the University of Nebraska Parents Association Appreciation Award.

Ayse Irmak received the American Society of Agricultural and Biological Engineers Society Honorable Mention Paper Award.

Suat Irmak received the Blue Ribbon Award from the American Society of Agricultural and Biological Engineers and the Excellence in Service Award from the Environmental and Water Resources Institute of the American Society of Civil Engineers.

Richard Koelsch received the American Society of Agricultural and Biological Engineering's Standards Certificate of Appreciation Award, President's Citation Award and Blue Ribbon Award.

Derrel Martin was inducted as a member of the Nebraska Hall of Agricultural Achievement.

Dennis Schulte received a Certificate of Recognition for Contribution to Students from the University of Nebraska Parents Association and the Holling Family Distinguished Engineering Award from the College of Engineering, University of Nebraska.

Lijun Wang received the American Society of Agricultural and Biological Engineering Superior Paper Award.

Curtis Weller received the American Society of Agricultural and Biological Engineering Blue Ribbon Paper Award.

Entomology

Frederick Baxendale received First Place Writing Award from the Turf and Ornamentals Communicators Association.

Tiffany Heng-Moss received the Who's Who Among America's Teachers Award from Marquis Who's Who; a Certificate of Recognition for Contributions to Students from the University of Nebraska Parents Association and the University of Nebraska Teaching Council; and the Regional Excellence in Teaching Award from the United States Department of Agriculture Food and Agriculture Sciences.

Shripat Kamble received the Distinguished Service as Governing Board Member Award from the Entomological Society of America.

Brett Ratcliffe received the Outstanding Paper of the Year from the Coleopterists Society.

Blair Siegfried received the Gamma Sigma Delta Research Award from the University of Nebraska Chapter of Gamma Sigma Delta.

Food Science and Technology

Susan Cuppett received a Certificate of Recognition for Contributing to Students from the University of Nebraska Parents Association and the University of Nebraska Teaching Council; the L.K. Crowe Outstanding Undergraduate Student Advisor Award from the College of Agricultural Sciences and Natural Resources; and the Outstanding Teaching Award for College of Agricultural Sciences and Natural Resources Week.

Rolando Flores received an award from the Lincoln Chamber of Commerce for individuals that have a positive impact in economic development in the City of Lincoln.

Curtis Weller received the Blue Ribbon Paper Award from the American Society of Agricultural and Biological Engineers.

Plant Pathology

Loren Giesler received the Holling Family Award for Teaching Excellence from the University of Nebraska, Institute of Agriculture and Natural Resources.

James Partridge received a Certificate of Recognition for Contributions to Students from the University of Nebraska Parents Association and the University of Nebraska Teaching Council.

School of Natural Resources

Tala Awada received the Dinsdale Family Faculty Award from the Institute of Agriculture and Natural Resources.

James Brandle received the Darrell W. Nelson Excellence in Graduate Student Advising Award from the Institute of Agriculture and Natural Resources and the College of Agricultural Sciences and Natural Resources.

James Goeke received the Irv Omtvedt Innovation Award from the Institute of Agriculture and Natural Resources.

F. Edwin Harvey received the Fellow Award from the Geological Society of America.

Deepak Mishra received the Outstanding Research Assistant of the Year Award from the University of Nebraska.

Patrick Shea received the Editor's Citation for Excellence in Manuscript Review and a Certificate of Merit for Extension Publications from the American Society of Agronomy.

James Swinehart received the Charles E. Bessey Award from The Center for Great Plains Research, University of Nebraska.

Tsegaye Tadesse received the Who's Who Among America's Teachers Award from Marquis Who's Who.

Andrew Tyre received the Junior Faculty Award for Research Excellence from the Agricultural Research Division.

Shashi Verma received the Outstanding Achievement in Biometeorology from the American Meteorological Society.

Elizabeth Walter-Shea received the College of Agricultural Sciences and Natural Resources Service Award from the college's Alumni Association.

Donald Wilhite received the Irv Omtvedt Innovation Award from the Institute of Agriculture and Natural Resources.

Veterinary and Biomedical Sciences

Gerald Duhamel received the Milton E. Mohr Fellowship in Biotechnology from the University of Nebraska and the Susan Ann Smith Mills Memorial Award from the Department of Veterinary and Biomedical Sciences.

Dicky Griffin received the Nebraska Cattlemen's Service Award for Contributions to Beef Quality Assurance from the Nebraska Cattlemen's Association and the Nebraska Veterinary Medical Association's Distinguished Service Award from the Nebraska Veterinary Medical Association.

David Smith received the Wendell Burgher Beef Industry Award from the University of Nebraska Foundation.

Education and Human Sciences Departments

Child, Youth and Family Studies

Douglas Abbott received the Fulbright Scholar Award from the United States Fulbright Foundation.

ARD Junior Faculty Excellence in Research Award winners are Andrew Tyre, School of Natural Resources, and Melanie Simpson, Department of Biochemistry.

Richard Bischoff received the Donald R. and Mary Lee Swanson Award for Teaching Excellence from the College of Education and Human Sciences.

Cody Hollist received a Certificate of Recognition for Contributions to Students from the University of Nebraska Parents Association and the University of Nebraska Teaching Council.

Nutrition and Health Sciences

Janos Zempleni received the Mead Johnson Award from the American Society for Nutrition.

Textiles, Clothing and Design

Patricia Crews received the Hall of Fame Award from the Nebraska State Quilt Guild.

Shirley Niemeyer received the Distinguished Service Award from the Housing Education and Research Association and the Cather Circle Award in networking/mentoring focusing on growth and education of women to create leaders nationwide from the Cather Circle.

Off-Campus Research Centers

Northeast Research and Extension Center

Stevan Knezevic received the Best Extension Publication Award for the Nebraska Weed Guide from the American Society of Agronomy.

Donald Levis received the National Pork Board Education Award for an on-farm delivered extension program from the National Pork Board.

Panhandle Research and Extension Center

Linda Boeckner was elected a member of the Nebraska Hall of Agricultural Achievement in recognition of service to agriculture and received the Irv Omtvedt Innovation Award from the Institute of Agriculture and Natural Resources.

Robert Harveson received the Blue Ribbon Award from the American Society of Agricultural Engineers.

Gary Hergert received the Educational Aids Competition Award for Outstanding Publication from the American Society of Agricultural and Biological Engineers.

Drew Lyon received the Outstanding Entry in the Educational Aids Competition from the American Society of Agricultural Engineers and a Certificate of Excellence in the Educational Materials Awards Program from the American Society of Agronomy.

Ivan Rush received the Service to the Cattle Industry Award from the Nebraska Cattlemen's Association.

Robert Wilson received the Outstanding Extension Award from the Weed Science Society of America.

West Central Research and Extension Center

Don Adams received the Nebraska Hall of Agricultural Achievement Award from the State of Nebraska.

Richard Funston received the Excellence in Applied Animal Science Research from the Western Section of the American Society of Animal Science.

Graduate Student Awards and Recognitions

One of the primary missions of the ARD research program is to develop the scientists of tomorrow. We are committed to providing exceptional graduate students with the opportunity to work with and learn from our research faculty.

ARD is among the national leaders in research in food production and processing, natural resources management and family sciences. Approximately 876 graduate students are pursuing advanced degrees with ARD faculty. The quality of our graduate students is reflected in the recognition they receive.

Agricultural Economics

Kyriakos Drivas received the Dr. James B. Hassler Award for Outstanding Research by a Graduate Student from the Department of Agricultural Economics.

Marianna Khachaturyan received the Graduate Student Research Award and Creative Activity Competition Award from the Department of Agricultural Economics.

Gibson Nene received the Outstanding Ph.D. Student Award from the Department of Agricultural Economics.

Justin Van Wart received the Outstanding M.S. Student Award from the Department of Agricultural Economics.

Agronomy and Horticulture

Ahmed Mohammed Al-Wadaey received the Widaman Trust Distinguished Graduate Assistant Award from the Agricultural Research Division.

Neal Bryan received the Milton E. Mohr Fellowship from the College of Agricultural Sciences and Natural Resources and the Arthur William Sampson Fellowship from the Center for Grasslands Studies.

Leandro Castaneda received the David H. & Annie E. Larrick Student Travel Award from the Agricultural Research Division.

Nicholas Crowley received the Mary and Charles C. Cooper/ Emma I. Sharpless Fellowship from the College of Agricultural Sciences and Natural Resources.

Matthew Giovanni received the W.R. Chapline Fellowship from the Center for Grasslands Studies and the Irvin A. & Agnes E. Nelson Memorial Fellowship from the College of Agricultural Sciences and Natural Resources.

Neomi Guidin-Garcia received the Chancellor's Doctoral Fellowship from the Office of Graduate Studies.

Tejinder Kumar Mall received the Hardin Distinguished Graduate Fellowship from the Agricultural Research Division.

Neway Mengistu received the Moseman Fellowship from the Agricultural Research Division.

Nathan Mueller received the Widaman Trust Distinguished Graduate Assistant Award and the David H. & Annie E. Larrick Student Travel Award from the Agricultural Research Division.

William Rittenour received the Milton E. Mohr Fellowship from the Center for Biotechnology.

Darrin Roberts received the William J. Curtis Endowed Fellowship from the College of Agricultural Sciences and Natural Resources.

Fernando Salvagiotti received the David H. & Annie E. Larrick Student Travel Award from the Agricultural Research Division.

Ajay Sandhu received the Shear-Miles Fellowship from the Agricultural Research Division.

Paul Schroeder received the David H. & Annie E. Larrick Student Travel Award from the Agricultural Research Division.

Desalegn Serba received the Chancellor's Doctoral Fellowship from the Office of Graduate Studies and the Hardin Distinguished Graduate Fellowship from the Agricultural Research Division.

Fernando Solari received the David H. & Annie E. Larrick Student Travel Award from the Agricultural Research Division.

Tri Setiyono received the Gerald O. Mott Meritorious Graduate Student Award in Crop Science.

Vikas Shedge received the Widaman Trust Distinguished Graduate Assistant Award from the Agricultural Research Division.

Animal Science

Alia Aljamal received the Frank Mussehl Graduate Scholarship from the Agricultural Research Division.

Michelle Baltes received the Graduate Student Paper Award from the Nebraska Physiological Society.

Jared Bates received a William G. Whitmore Travel Grant from the Agricultural Research Division and the Innovation in Research Award from the National Pork Board.

Virgil Bremer received a William G. Whitmore Travel Grant from the Agricultural Research Division.

Crystal Buckner received a William G. Whitmore Travel Grant from the Agricultural Research Division and the First Place Award for competitive paper at the Plains Nutrition Conference.

Ching-Yi Chen was inducted into membership in the University of Nebraska Chapter of Sigma Xi, received a V.H. Arthaud Memorial Award from the Animal Science Department, a William G. Whitmore Travel Grant and a Widaman Trust Distinguished Graduate Assistant Award from the Agricultural Research Division.

Mark Corrigan received a Widaman Trust Distinguished Graduate Assistant Award from the Agricultural Research Division.

Makram Geha received the Ned S. and Esther B. Raun International Graduate Fellowship from the Animal Science Department.

Amanda Gehman received a William G. Whitmore Travel Grant from the Agricultural Research Division.

Matt Greenquist received the Second Place Award for competitive paper at the Plains Nutrition Conference.

Will Griffin received a John Hallman Memorial Award and a V.H. Arthaud Memorial Award from the Animal Science Department.

Zachary Hall received a John & Louise Skala Distinguished Fellowship from the Agricultural Research Division.

Adam Hamling received a V.H. Arthaud Travel Award from the Animal Science Department.

Jennie Hodgen received the Third Place Award in the Ph.D. Poster Competition at Reciprocal Meats Conference.

Vanesa Heagle received a Milton E. Mohr Fellowship from the Center for Biotechnology.

Blaine Jenschke received the Milton E. Mohr Fellowship from the Center for Biotechnology.

Jennie James-Hodgen received the Third Place Award in the Ph.D. Poster Competition at the Reciprocal Meat Conference.

Jolene Kelzer received the William J. Curtis Fellowship from the College of Agricultural Sciences and Natural Resources.

Pradeep Krishnan received the Frank Mussehl Graduate Scholarship from the Animal Science Department.

Matt Luebbe received the Second Place Award in the M.S. Paper Competition from the Midwest Section of the American Society of Animal Science.

Jeremy Martin received a Bukey Memorial Graduate Fellowship from the Office of Graduate Studies, a Milton E. Mohr Fellowship from the Center for Biotechnology, recognition by the Western Section of the American Society of Animal Science for outstanding research paper, and a Widaman Trust Distinguished Graduate Assistant Award from the Agricultural Research Division.

Mahmoud Masadeh received a Ruth Keller Memorial Scholarship from Nebraska Poultry Industries.

Jennifer McDonald was awarded Associate Membership in the University of Nebraska Chapter of Sigma Xi, a Warren F. and Edith R. Day Travel Award from the Office of Graduate Studies, and the Shear-Miles Fellowship from the Agricultural Research Division.

Kelsey Rolfe received a Mary and Charles C. Cooper/Emma I. Sharpless Fellowship from the College of Agricultural Sciences and Natural Resources.

Jason Scheffler received the John Hallman Memorial Award from the Animal Science Department.

Jacqueline Smith received a William G. Whitmore Travel Grant from the Agricultural Research Division.

Wang Yue received a Milton E. Mohr Fellowship from the Center for Biotechnology.

Biochemistry

Ekaterina Biterova received a Bukey Memorial Graduate Fellowship from the Office of Graduate Studies.

Gina Boanca received a Farmers National Company Fellowship from the College of Agricultural Sciences and Natural Resources.

Robert Galbenus received a Farmers National Company Fellowship from the College of Agricultural Sciences and Natural Resources.

Navasona Krishnan received a Milton E. Mohr Fellowship from the Center for Biotechnology.

Vyacheslav Labunskyy received a Milton E. Mohr Fellowship from the Center for Biotechnology and a Bukey Memorial Graduate Fellowship from the Office of Graduate Studies.

Boon Hoe Lim received a Larrick Student Travel Fund Award from the Agricultural Research Division.

Amy Miller received a Milton E. Mohr Fellowship from the Center for Biotechnology.

Melanie Neely Willis received an Othmer Fellowship from the Office of Graduate Studies.

Devis Sinani received a Farmers National Company Fellowship from the College of Agricultural Sciences and Natural Resources.

Biological Systems Engineering

Amy Jorde received an Irvin and Agnes Nelson Memorial Fellowship from the College of Agricultural Sciences and Natural Resources.

Ajay Kumar received a Milton E. Mohr Fellowship from the College of Engineering.

Luis Lagos received a Mary and Charles C. Cooper/Emma I. Sharpless Fellowship from the College of Agricultural Sciences and Natural Resources.

Heartwin Pushpadass received a Milton E. Mohr Fellowship from the College of Engineering.

Bryan Smith received a Milton E. Mohr Fellowship from the College of Agricultural Sciences and Natural Resources.

Entomology

Nicholas Aliano received a Graduate Student Scholarship Award from the North Central Branch of the Entomological Society of America, the Widaman Trust Distinguished Graduate Assistant Award from the Agricultural Research Division and two Myron H. Swenk Memorial Fund Travel Awards from the Bruner Club Executive Committee.

Analiza Alves received the School of Biological Sciences Initiative for Ecological and Evolutionary Analysis Travel Award and two Myron H. Swenk Memorial Fund Travel Awards from the Bruner Club Executive Committee.

Mathew Brust received a Farmers National Company Fellowship from the College of Agricultural Sciences and Natural Resources.

Laura Campbell received a Myron H. Swenk Memorial Fund Travel Award from the Bruner Club Executive Committee.

Julia Colby received an Ernst Mayr Travel Grant in Animal Systematics from Harvard University and a Myron H. Swenk Memorial Fund Travel Award from the Bruner Club Executive Committee.

Andre Crespo received the First Place Award in the Ph.D. Competitive Paper at the North Central Branch Entomological Society of America meeting and two Myron H. Swenk Memorial Fund Travel Awards from the Bruner Club Executive Committee.

Michael Fisher received a Myron H. Swenk Memorial Fund Travel Award from the Bruner Club Executive Committee.

Andrea Gutsche received a Mary and Charles C. Cooper/Emma I. Sharpless Fellowship from the College of Agricultural Sciences and Natural Resources.

Timothy Huntington received membership in the American Board of Forensic Entomology (youngest member in the board's history) and the Milton E. Mohr Fellowship from the College of Agricultural Sciences and Natural Resources.

Timothy Husen received the David H. and Annie E. Larrick Student Travel Award from the Agricultural Research Division, a Ward A. and Helen W. Combs Scholarship and a Myron H. Swenk Memorial Fund Travel Award from the Bruner Club Executive Committee.

Leonardo Magalhaes received a Milton E. Mohr Fellowship from the College of Agricultural Sciences and Natural Resources, a David H. and Annie E. Larrick Student Travel Award from the Agricultural Research Division, a Second Place Award in the M.S. competitive paper at the North Central Branch Entomological Society of America meeting, and a Myron H. Swenk Memorial Fund Travel Award from the Bruner Club Executive Committee.

Eliseu Pereira received a Coordination for the Improvement of Higher Education Personnel Fellowship from the Brazilian Ministry of Education.

Neil Spomer received a Milton E. Mohr Scholarship from the Center for Biotechnology, a Phi Chi Omega Scholarship, a Ward A. and Helen W. Combs Scholarship, and a Myron H. Swenk Memorial Fund Travel Award from the Bruner Club Executive Committee.

Sheri Svehla received a Myron H. Swenk Memorial Fund Travel Award from the Bruner Club Executive Committee.

Sek Yee Tan received a Mary and Charles C. Cooper/Emma I. Sharpless Fellowship from the College of Agricultural Sciences and Natural Resources and a Myron H. Swenk Memorial Fund Travel Award from the Bruner Club Executive Committee.

Luciana Toda received a Myron H. Swenk Memorial Fund Travel Award from the Bruner Club Executive Committee.

Chelsey Wasem received a Farmers National Company Fellowship from the College of Agricultural Sciences and Natural Resources, was initiated into Gamma Sigma Delta, and received a Myron H. Swenk Memorial Fund Travel Award from the Bruner Club Executive Committee.

School of Natural Resources

Stephanie Bequeath received a UCARE grant for her research, "Germination and Early Growth of *Kochia scoparia* under Various Temperature Regimes."

Austin Bontrager received a UCARE grant for his research, "Remediating Contaminated Soil and Water with the Persulfate Radical."

John Dinneen received a UCARE grant for his research, "Sand Movement and Dune Destabilization in the Nebraska Sandhills" and the UCARE Outstanding Junior Poster Award at the University of Nebraska Spring Research Fair.

Andrew Furman received a UCARE grant for his research, "Tonic Immobility in Freshwater Fish."

Scott Harter received a UCARE grant for his research, "Reproductive Ecology of Western Painted Turtles *(Chrysemys picta)*."

Trevor Hefley received a UCARE grant for his research, "Estimating Health and Population Level of White-tailed Deer in Eastern Nebraska."

Justin Hoffman received the North American Colleges and Teachers of Agriculture Graduate Student Teaching Award from the College of Agricultural Sciences and Natural Resources.

Jessica Milby received a UCARE grant for her research, "Ecology of Sandhills, Grasslands."

Kimberly Payne received an Environmental Protection Agency STAR Fellowship for her research project, "Interactions Among Plants, Soils and Microorganisms and Their Roles in Stabilizing the Nebraska Sand Hills."

Andrew Podany received a UCARE grant for his research, "Germination and Early Growth of *Kochia scoparia* under Various Temperature Regimes."

Marcy Pummill received the Outstanding Graduate Student Research Award from the Nebraska Statewide Arboretum.

John Quinn received the William J. Curtis Endowed Fellowship from the College of Agricultural Sciences and Natural Resources.

Adam Rupe received a UCARE grant for his research, "The Performance of a 22-year-old *Pinus sylvestris* Plantation Originating from Six European Countries in Nebraska."

Evy Santiago received a UCARE grant for her research, "Patterns of Woody Vegetation Along Shorelines."

Rebecca Sikes received a UCARE grant for her research, "Water Use by a Nebraska Windbreak."

Jessica Umberger received a UCARE grant for her research, "The Impact of Temperature on the Germination and Early Growth of *Kochia scoparia*."

Manmeet Waria received a Student Poster Award for her poster presentation "Remediating pesticide-contaminated soil by combined chemical and biological treatment" at the University of Nebraska Research Fair.

Veterinary and Biomedical Sciences

Gulzar Ahmad, M.S. Program, received the Best Seminar Award from the Department of Veterinary and Biomedical Sciences.

HarshDeep Dogra, Ph.D. Program, received from the Department of Veterinary and Biomedical Sciences the Best Seminar Award and the Best Presentation Award at the University of Nebraska Research Fair.

Florencia Meyer received a Milton E. Mohr Fellowship from the Center for Biotechnology.

Education and Human Sciences Departments

Child, Youth and Family Studies

Cixin Wang received the David H. & Annie E. Larrick Student Travel Award from the Agricultural Research Division.

Nutrition and Health Sciences

Nancy Hakel-Smith received the First Author Published Paper Award, Research Dietetic Practice Group from the American Dietetic Association.

Yousef Hassan received the Widaman Trust Distinguished Graduate Assistant Award from the Agricultural Research Division.

Heather Rasmussen received the Widaman Trust Distinguished Graduate Assistant Award from the Agricultural Research Division.

The purpose of this program is to allow outstanding University Honors Program students to conduct research under the direction of a faculty mentor. The program is open to junior and senior Honors Program participants proposing to work with a faculty member who has an ARD appointment. A subcommittee of the ARD Advisory Council selects awardees based on the quality of the proposal. Proposals are authored by the students with guidance from the proposed project mentors.

Animal Science

Kate Breister received an Undergraduate Honors Student Research Award for "Address Changes in Male Fertility and Reproductive Physiology in Selected Lines of Mice" from the Agricultural Research Division. (M.K. Nielsen, Advisor)

Kathryn Cockerill received an Undergraduate Honors Student Research Award for "Variation in Steroid Hormone (FSH, LH & Insulin) Concentrations in Mature Females of Mouse Lines Divergently Selected for Heat Loss" from the Agricultural Research Division. (M.K. Nielsen, Advisor)

Anna Fuller received an Undergraduate Honors Student Research Award for "The Role of Bc12L in Controlling Sertoli Cell Numbers in the Developing Testes" from the Agricultural Research Division. (M.M. Beck and J.S. Weber, Advisors)

Jenna Giagarra received an Undergraduate Honors Student Research Award for "Locomotive Muscle Contraction Variation in Strides Between Differing Equine Breeds" from the Agricultural Research Division. (R.K. Johnson, Advisor)

Andrea Schwarz received an Undergraduate Honors Student Research Award for "Forage Quality and Grazing Performance of Beef Cattle Utilizing Grain Sorghum Residue With or Without the Brown-midrib (BMR) Trait" from the Agricultural Research Division. (P.S. Miller and G.E. Erickson, Advisors)

Nutrition and Health Sciences

Kara Blobaum received an Undergraduate Honors Student Research Award for "Mechanisms Underlying the Modulation of the Expression of Cellular Cholesterol Regulatory Proteins by *Nostoc commune*, a Blue-green Alga" from the Agricultural Research Division. (J-Y. Lee, Advisor)

Veterinary and Biomedical Sciences

Natsuki Nagashima received an Undergraduate Honors Student Research Award for "Characterization of *Brachyspira pilosicoli* Isolated from Human and Animals Using Multilocus Sequence Typing" from the Agricultural Research Division. (G.E. Duhamel, Advisor)

ARD faculty involved in plant breeding and genetics research make important contributions to the improvement and development of agricultural and horticultural crops.

Public breeding programs such as ARD's are essential to the continued enhancement of plant germplasm. These programs provide the resources and flexibility to pursue long-term breeding programs in crops that may not have a current commercial interest. They also can address genetic, cultural and management interactions characteristic of today's agriculture, as well as the future's.

Germplasm releases provide improved genetic material that is integrated into private and public plant breeding programs. Other releases occur as new cultivars (varieties), which are increased through the Foundation Seed Division and then provided to seed companies for production of certified seed. The following releases were made in 2006-2007.

Agronomy and Horticulture

Crop: Grain Sorghum [*Sorghum bicolor* (L.) Moench]

Germplasm Release: BN611, A/BN612, RN613

Scientists: J.F. Pedersen, D.L. Funnell, J.J. Toy, A.L. Oliver, R.J. Grant, W.H. Miner

Released by: The United States Department of Agriculture, Agricultural Research Service, Nebraska Agricultural Experiment Station, and the Nebraska Agricultural Research Division, University of Nebraska.

Characteristics: The genetic stocks BN611, A/BN612, and RN613 are F3 or F4 selections from crosses between sister-lines of N598 (Atlas bmr-6) and 'Atlas bmr-12,' N599 (Wheatland bmr-6) and N600 (Wheatland bmr-12), and N609 (RTx430 bmr-6) and N610 (RTx430 bmr-12), respectively. BN611 resembles Atlas, has white caryopses with no tannin-containing testa, normal white endosperm, is awnless, has purple necrotic wound response, juicy culms, and does not restore fertility in A1 cytoplasm. Averaged over 4 environments, BN611 was 2 d later in maturity and 60 cm shorter in height than Atlas. BN612 resembles Wheatland, has red caryopses with no tannin-containing testa, normal white endosperm, is awnless, has purple necrotic wound response, juicy culms, and does not restore fertility in A1 cytoplasm. Averaged over 4 environments, BN612 was 4 d later in maturity and 7 cm shorter in height than Wheatland. RN613 resembles RTx430, has white caryopses with no tannin-containing testa, yellow endosperm, is awnless, has purple necrotic wound response, juicy culms, and restores fertility in A1 cytoplasm. Averaged over 4 environments, RN613 was 7 d later in maturity and 5 cm taller in height than RTx432. Release of these genetic stocks makes stacked brown midrib genes reported to reduce the activity of two specific enzymes important in lignin synthesis, cinnamyl alcohol dehydrogenase (bmr-6) and O-methyltransferase (bmr-12) available in a common forage sorghum, a common grain sorghum seed parent, and a common grain sorghum pollen parent background. The genetic stocks have immediate application for basic research involving lignin synthesis.

Crop: Canada wildrye (*Elymus canadensis* L.)

Variety Name: 'Homestead'

Scientists: K.P. Vogel, R.B. Mitchell, K.D. Johnson, I.T. Carlson, D.D. Baltensperger

Released by: United States Department of Agriculture, Agricultural Research Service, and the Nebraska Agricultural Research Division, University of Nebraska.

Characteristics: Homestead was evaluated and tested using the experimental strain designation NE3. It was selected from germplasm of Canada wildrye that was collected from remnant prairie sites in the Midwest states in the autumn of 1989. The collected accessions were evaluated in replicated, space-transplanted germplasm evaluation trials in NE, IA, and IN during the period 1990 through 1992. Homestead had 60% greater forage yield than that of the only released Canada wildrye cultivar, Mandan, averaged over all locations. Seed increased in a space-transplanted nursery was used to establish small plot sward evaluation trials at Mead and Sidney, NE. During the period

2000-2003, Homestead and another Canada wildrye experimental strain, NE5, had 35 percent higher forage yields at Mead than Omaha Virginia wildrye, a related native species, and they had significantly greater stand persistence. Homestead is a direct increase of a bulk collection of seed from Canada wildrye plants growing in the Nine Mile Prairie, which is located on the western edge of Lincoln, NE and managed by the University of Nebraska–Lincoln. Canada wildrye is a largely self-pollinated species and bulk collections are a mixture of homozygous genotypes. Homestead Canada wildrye is adapted to USDA Plant Hardiness Zone 5 of the Prairie Parkland or tallgrass prairie ecoregion of the Midwest USA. When grown in this region, it produces more forage than the previously available cultivar of the species and its forage has high *in vitro* dry matter digestibility and high protein concentration. Its primary use will be in conservation and grassland plantings as a component of seeding mixtures.

Off-Campus Research Centers

Panhandle Research and Extension Center

Crop: Wheat

Variety Name: 'Infinity CL'

Scientists: P.S. Baenziger, B. Beecher, R.A. Graybosch, D.D. Baltensperger, L.A. Nelson, J.M. Krall, Y. Jin, J.E. Watkins, D.J. Lyon, A.R. Martin, M. Chen, and G. Bai

Released by: Nebraska Agricultural Experiment Station and United States Department of Agriculture, Agricultural Research Division

Characteristics: 'Infinity CL' (Reg. No. CV-982, PI 639922) is a hard red winter wheat (*Triticum aestivum* L.) cultivar developed cooperatively by the Nebraska Agricultural Experiment Station and the USDA-ARS and released in 2005 by the developing institutions. Infinity CL was released primarily for its herbicide tolerance to imadazoline compounds, which control many previously difficult to control weeds in wheat production systems, and for its superior adaptation to rainfed wheat production systems in Nebraska and counties in adjacent states. The name Infinity CL was chosen because it is a Clearfield wheat that will be used with Beyond herbicide {active ingredient imazamox, 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-5-(methoxymethyl)-3-pyridinecarboxylic acid; BASF Corp., Triangle Park, NC}.

West Central Research and Extension Center

Crop: Penstemon (*Penstemon digitalis L.)*

Variety Name or Germplasm Nomenclature: 'Dark Towers'

Scientists: D.T. Lindgren and D. Schaaf

Released by: University of Nebraska–Lincoln Agricultural Research Division and Terra Nova Nurseries, Inc.

Characteristics: 'Dark Towers' is a selection of *Penstemon* that came from a cross of *P.* 'Husker Red' and *P.* 'Prairie Splendor'. It has glossy bronze-red foliage, topped with masses of pink flowers in June. It tolerates high heat. It grows to a height of about 36 inches tall. Terra Nova Nurseries, Inc., has applied for Plant Variety Protection for this selection.

Patent protection is an important parameter in research. It is especially important for discoveries and innovations that have a potential commercial application. Therefore, from time to time, the ARD (and the University) may determine that the public good is best served with regard to technology transfer by entering into an agreement with a public or private institution that provides the institution with proprietary interests in specific research. The research of ARD scientists often can lead to a patent. Most of the patents that have been awarded to ARD scientists have been for equipment developments and specialized processes. These patents often are licensed by private industry, with royalties being reinvested in future ARD research. The following patents were awarded in 2006-2007.

Animal Science

Patent Title: Linkage of a polymorphic form of glucocorticoid receptor gene to low corticosterone response, hypoactivity, heat loss, memory impairment, and anxiety-type behavior in mice.

Patent Number: U.S. 60/803,684; ZHO-0601

Scientists: Y. Zhou and M.K. Nielsen

Plant Pathology

Patent Title: DNA molecules and polypeptides of *Pseudomonas syringae* Hrp pathogenicity island and their uses

Patent Number: U.S. 7,102,059

Scientists: A. Collmer, J.R. Alfano, and A. Charkowski

ARD is a division within the Institute of Agriculture and Natural Resources (IANR) at the University of Nebraska. IANR was established by the Nebraska legislature in 1973 and has its headquarters on the University of Nebraska–Lincoln East Campus. The University of Nebraska system has four campuses: University of Nebraska–Lincoln, University of Nebraska Medical Center, University of Nebraska at Omaha and the University of Nebraska at Kearney. The University of Nebraska system is governed by an elected Board of Regents and administered by a system and campus administration.

Administrative Personnel
(June 2007)

University of Nebraska Board of Regents

Randolph Ferlic, Omaha
Chuck Hassebrook, Walthill
Howard Hawks, Omaha
Jim McClurg, Lincoln
Drew Miller, Papillion
Ken Schroeder, Kearney
Charles S. Wilson, Lincoln

Student Regents

UNMC — Dan Connealy
UNO — Steve Massara
UNL — Matt Schaefer
UNK — Mike Eiberger

Administrative Officers

James B. Milliken, President, University of Nebraska

Harvey S. Perlman, Chancellor, University of Nebraska–Lincoln

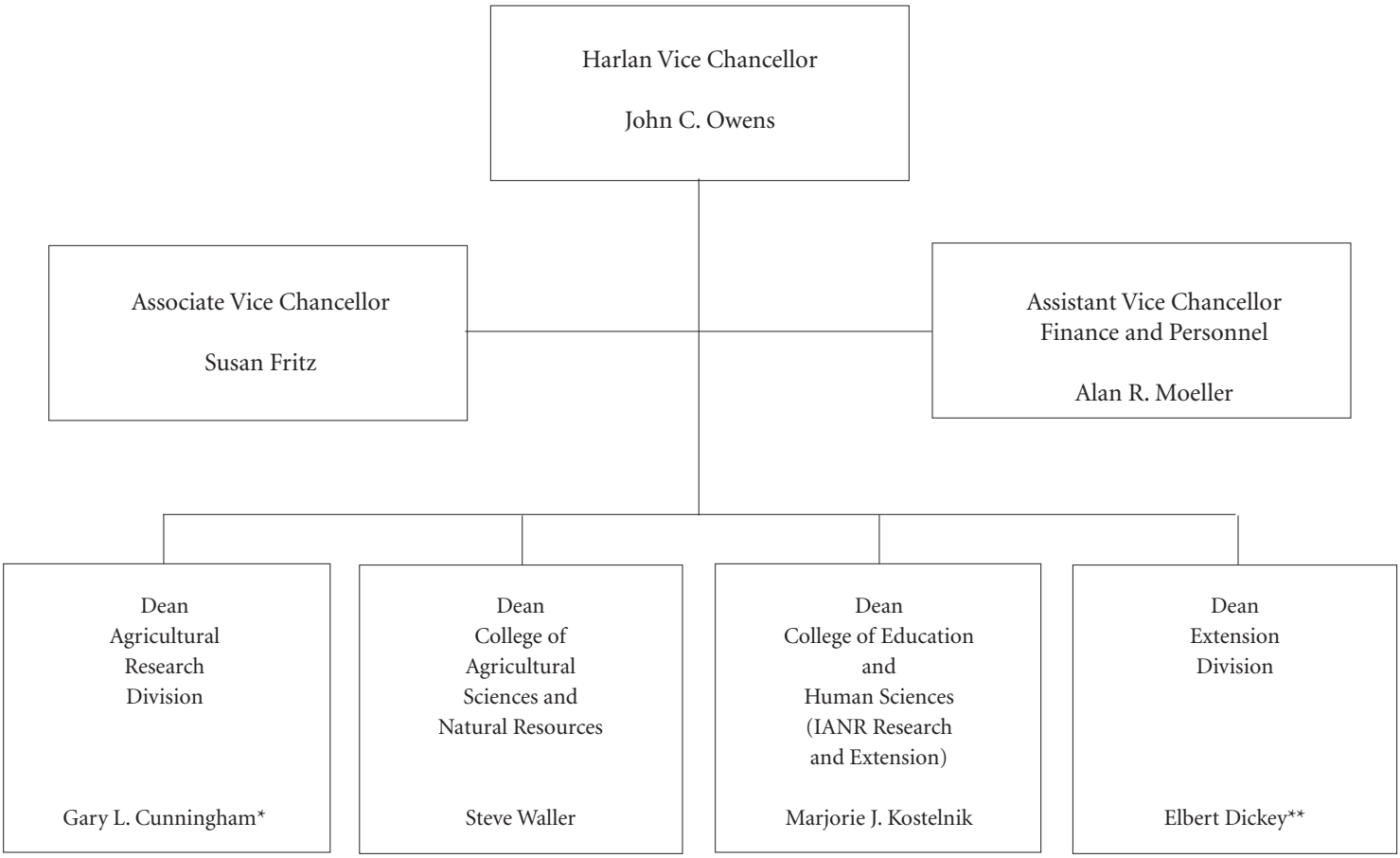
John C. Owens, Harlan Vice Chancellor, Institute of Agriculture and Natural Resources, and Vice President, University of Nebraska

Agricultural Research Division

Gary L. Cunningham, Dean and Director
Z B Mayo, Interim Associate Dean and Associate Director
Daniel J. Duncan, Assistant Director
Marjorie J. Kostelnik, Associate Director, Education and Human Sciences
Dora Dill, Secretary Specialist
Nelvie Lienemann, Administrative Technician
Karen Jackson, Programming Assistant
Nancy Shoemaker, Clerical III

Organizational Chart

Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
June 2007



*Director, Nebraska Agricultural Experiment Station
**Director, University of Nebraska Extension

Administrative Units Reporting to Agricultural Research Division
Institute of Agriculture and Natural Resources
The University of Nebraska–Lincoln
June 2006

Agricultural/ Natural Resources Units

Agricultural Economics
Alan Baquet, Head

Agricultural Leadership, Education and Communication
Daniel Wheeler, Head

Agronomy and Horticulture
Mark Lagrimini, Head

Animal Science
Donald Beermann, Head

Biochemistry
Donald Weeks, Head[1]
Ray Chollet, Interim Head[2]

Biological Systems Engineering
Ron Yoder, Head

Entomology
Fred Baxendale, Interim Head[1]
Gary Brewer, Head[2]

Food Science and Technology
Rolando Flores, Head

Plant Pathology
Anne Vidaver, Head[1]
James Steadman, Head[2]

School of Natural Resources
Mark Kuzila, Director

Statistics
Walter Stroup, Chair

Veterinary and Biomedical Sciences
David Hardin, Head

Education and Human Sciences Departments

Child, Youth and Family Studies
Julie Johnson, Chair

Nutrition and Health Sciences
Marilynn Schnepf, Chair

Textiles, Clothing and Design
Michael James, Chair

Off-Campus Research Centers

Agricultural Research Development Center
Ithaca—Daniel Duncan, Director

Northeast Research and Extension Center
Concord—John Witkowski, Director

Panhandle Research and Extension Center
Scottsbluff—Charles Hibberd, Director

Southeast Research and Extension Center
Lincoln—Susan Williams, Director

West Central Research and Extension Center
North Platte—Don Adams, Director

Interdisciplinary Centers

Biotechnology Center
Michael Fromm, Director

Food Processing Center
Rolando Flores, Director

Center for Grassland Studies
Martin Massengale, Director

Great Plains Regional Center for Global Environmental Change
Shashi Verma, Director

Industrial Agricultural Products Center
Milford Hanna, Director

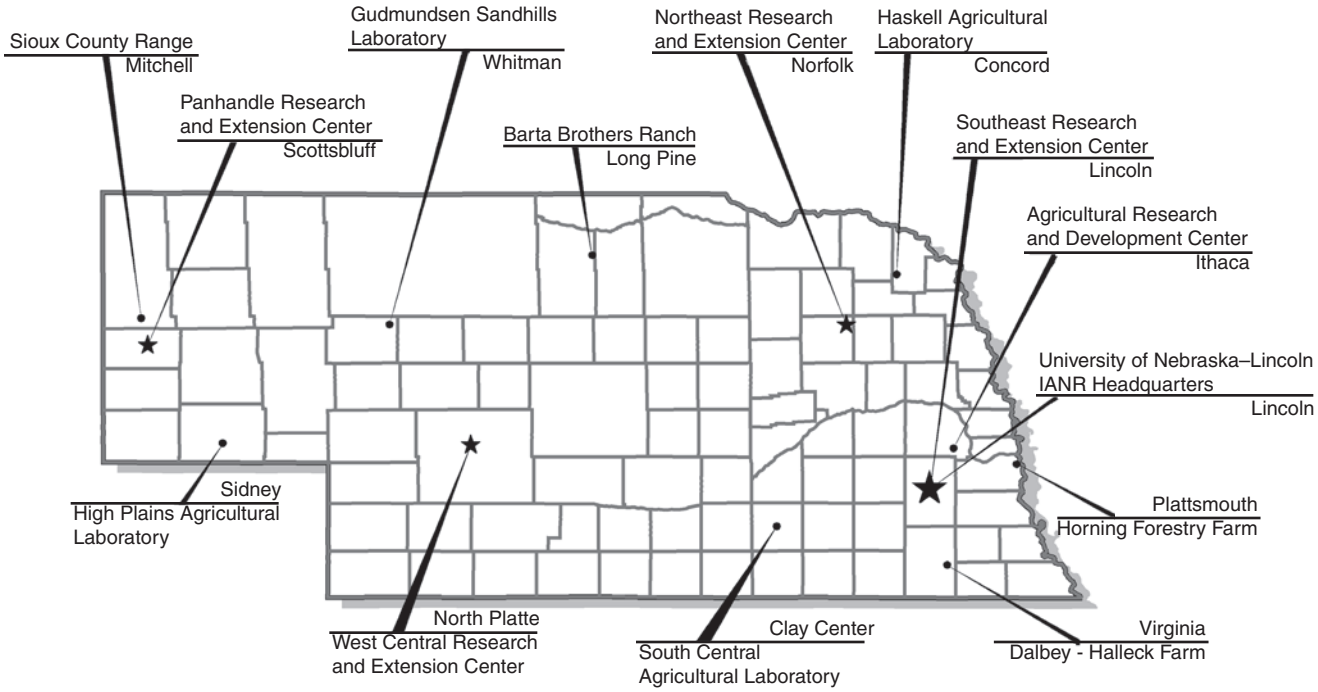
Center for Applied Rural Innovation
Alan Baquet, Director

Water Center
Kyle Hoagland, Director
Mike Jess, Acting Director

IANR Communications and Information Technology
Roger Terry, Interim Director

[1]Ended appointment 2006-2007
[2]Began appointment 2006-2007

IANR Research Facilities



Research by Agricultural Research Division researchers is conducted across the state. Sites include:

Agricultural Research and Development Center — Ithaca

Barta Brothers Ranch — Long Pine

Dalbey-Halleck Farm — Virginia

Gudmundsen Sandhills Laboratory — Whitman

Haskell Agricultural Laboratory — Concord

High Plains Agricultural Laboratory — Sidney

Horning Forestry Farm — Plattsmouth

Northeast Research and Extension Center — Norfolk

Panhandle Research and Extension Center — Scottsbluff

Sioux County Range — Mitchell

South Central Agricultural Laboratory, Great Plains Veterinary Educational Center, and the U.S. Meat Animal Research Center (USDA) — Clay Center

Southeast Research and Extension Center — Lincoln

West Central Research and Extension Center — North Platte

Approximately 304 faculty members have research appointments in ARD. Most have joint appointments, with teaching or extension responsibilities as well. Some faculty have responsibilities other than ARD research (rsch), extension (ext) or teaching (tch). Administrative appointments, as well as appointments with centers and other UNL units or with the USDA Agricultural Research Service (other), also are noted here.

ARD programs depend on many linkages and cooperative arrangements in order to make the most effective use of limited resources and to address problems of mutual interest. The USDA Agricultural Research Service (ARS) has about 36 scientists located on the UNL campus. Historically there has been a very close working relationship between these scientists, all holding adjunct faculty status, and UNL faculty. Four departments contain ARS scientists: the Departments of Agronomy and Horticulture, Entomology, Plant Pathology and Biological Systems Engineering. ARS scientists are noted as USDA in the *other* category.

UNL scientists also cooperate closely with many ARS faculty at the Roman L. Hruska Meat Animal Research Center (MARC) at Clay Center, Nebraska. There are about 50 scientists at the MARC facility, many of whom also hold UNL adjunct faculty status in the Department of Animal Science. MARC scientists are noted as USDA in the *other* category.

Another federal facility located on campus is the U.S. Forest Service National Agroforestry Center. USFS scientists also work closely with UNL faculty and hold adjunct faculty status. The Department of Entomology and School of Natural Resources have adjunct faculty noted as USDA in the *other* category.

The USDA Natural Resources Conservation Service has personnel located in UNL facilities at the West Central Research and Extension Center, North Platte. The NRCS professional personnel there as well as those at the federal center, Lincoln, work closely with ARD faculty on a number of natural resources-related activities.

The Departments of Animal Science, Biological Systems Engineering and Entomology have unique relationships with their industry supporters. Several industry representatives also hold adjunct appointments in these departments and are noted as industry in the *other* category.

The percentages listed represent the proportion of a faculty member's time assigned to each function. The primary research responsibility is identified for each. All ARD off-campus personnel who are located at Centers are associated with an on-campus department as well [Department/(Area of Responsibility)]. Faculty rank and assignment percentages are based on the fiscal year 2006-2007 departmental budgets.

Agricultural/Natural Resources Units

Agricultural Economics

	Rank	Rsch	Ext	Tch	Other	Area of Responsibility
Alan E. Baquet	Professor	0.07	0.72	0.21	0.00	Head
J. David Aiken	Professor	0.45	0.25	0.30	0.00	Agricultural and Natural Resources Law
Azzeddine Azzam	Professor	0.75	0.00	0.25	0.00	Research and Quantitative Methods, Industrial Organization of Food Processing
Dennis Conley	Professor	0.45	0.00	0.55	0.00	Agribusiness
Lilyan Fulginiti	Professor	0.75	0.00	0.25	0.00	Agricultural Policies/Production
Konstantinos Giannakas	Professor	0.75	0.00	0.25	0.00	Food and Agribusiness Marketing
Bruce B. Johnson	Professor	0.45	0.00	0.55	0.00	Resource and Community Economics
H. Douglas Jose	Professor	0.20	0.80	0.00	0.00	Farm and Ranch Management, Agricultural Finance Policy
Bradley Lubben	Assistant Professor	0.25	0.75	0.00	0.00	Public Policy
Gary Lynne	Professor	0.75	0.00	0.25	0.00	Natural Resource Economics
Richard Perrin	Professor	0.75	0.00	0.25	0.00	Production Economics
David J. Peters [2]	Assistant Professor	0.50	0.50	0.00	0.00	Rural Poverty, Industry Clusters, Entrepreneurship, and Effective Rural Development
E. Wesley Peterson	Professor	0.65	0.00	0.35	0.00	International Trade, Development and Policy
Jeffrey S. Royer	Professor	0.75	0.00	0.25	0.00	Agricultural Marketing Systems, Agribusiness Management, Organization and Performance of Ag and Food Industries
Raymond J. Supalla	Professor	0.75	0.00	0.25	0.00	Natural Resource Economics
Amalia Yiannaka	Assistant Professor	0.50	0.00	0.50	0.00	Intellectual Property Rights, Industrial Organization, Agricultural Marketing, Environmental and Resource Economics

Agricultural Leadership, Education and Communication

Daniel W. Wheeler	Professor	0.25	0.25	0.50	0.00	Head, Leadership Development
John E. Barbuto, Jr.	Associate Professor	0.50	0.00	0.50	0.00	Leadership Development
James W. King	Associate Professor	0.25	0.00	0.75	0.00	Distance Education

[1]Ended research appointment during 2006-2007
[2]Began research appointment during 2006-2007

Agronomy and Horticulture

	Rank	Rsch	Ext	Tch	Other	Area of Responsibility
Mark Lagrimini	Professor	0.47	0.15	0.38	0.00	Head
Bruce E. Anderson	Professor	0.25	0.75	0.00	0.00	Forage Specialist
Timothy J. Arkebauer	Professor	0.85	0.00	0.15	0.00	Crop Environmental Physiologist
P. Stephen Baenziger	Professor	0.75	0.00	0.25	0.00	Small Grains Breeding and Genetics
Gilles A. Basset[2]	Assistant Professor	0.78	0.00	0.20	0.02	Biochemical Geneticist
Mark L. Bernards	Assistant Professor	0.50	0.50	0.00	0.00	Irrigated Weed Scientist
Kenneth G. Cassman	Professor	0.40	0.10	0.00	0.50	Systems Agronomist
Thomas E. Clemente	Associate Professor	0.00	0.00	0.00	1.00	Manager, Plant Transformation Core Research Facility
Dennis Diestler	Research Professor	1.00	0.00	0.00	0.00	Soil Physical Chemistry
Achim R. Dobermann	Professor	0.70	0.30	0.00	0.00	Soil Fertility/Integrated Nutrient Management
Rhae A. Drijber	Associate Professor	0.75	0.00	0.25	0.00	Soil Microbial Ecologist
Ismail M. Dweikat	Associate Professor	0.80	0.00	0.20	0.00	Sorghum Genetics
Thomas E. Elthon	Associate Professor	0.00	0.00	0.00	1.00	Protein Researcher
Richard B. Ferguson	Professor	0.75	0.25	0.00	0.00	Soil Fertility Specialist
Charles A. Francis	Professor	0.43	0.20	0.37	0.00	Farming and Landscape Design
Roch E. Gaussoin	Professor	0.25	0.75	0.00	0.00	Turfgrass Management and Physiology
George L. Graef	Professor	0.85	0.00	0.15	0.00	Soybean Breeding and Genetics
Robert A. Graybosch	Professor	0.00	0.00	0.00	USDA	Wheat Genetics
Laurie Hodges	Associate Professor	0.35	0.65	0.00	0.00	Commercial Horticulture Production Specialist
Garald L. Horst	Professor	0.40	0.00	0.60	0.00	Turfgrass Physiology and Management
Donald J. Lee	Professor	0.25	0.15	0.60	0.00	Plant Geneticist
John L. Lindquist	Associate Professor	0.80	0.00	0.20	0.00	Crop/Weed Ecologist
Sally A. Mackenzie	Professor	0.00	0.00	0.00	1.00	Program Leader, Plant Science Initiative
Martha Mamo	Associate Professor	0.25	0.00	0.75	0.00	Soil Chemist/Biochemistry
John Markwell	Professor	0.25	0.00	0.00	0.75	Plant Biochemistry
Alexander R. Martin[1]	Professor	0.33	0.67	0.00	0.00	Integrated Weed Management/Reduced Herbicide Input
Stephen C. Mason	Professor	0.50	0.00	0.50	0.00	Cropping Systems
Martin A. Massengale	Professor	0.36	0.27	0.12	0.25	Grassland/Forages, Director of Center for Grassland Studies
Dennis L. McCallister	Professor	0.25	0.00	0.75	0.00	Soil Chemistry
Lenis A. Nelson	Professor	0.25	0.25	0.00	0.00	Crop Variety Evaluation/New Crops
Ellen T. Paparozzi	Professor	0.50	0.00	0.50	0.00	Urban Horticulture, Floriculture and Ornamental
Jeffrey F. Pedersen	Professor	0.00	0.00	0.00	USDA	Sorghum Genetics and Breeding
Paul E. Read	Professor	0.50	0.25	0.25	0.00	Plant Tissue Culture and Viticulture
Terrance P. Riordan	Professor	0.65	0.15	0.20	0.00	Turfgrass Plant Breeding
W. Ken Russell	Associate Professor	0.80	0.00	0.20	0.00	Plant Quantitative Genetics
Gautam Sarath	Professor	0.00	0.00	0.00	USDA	Molecular Biologist
Walter H. Schacht	Professor	0.60	0.00	0.40	0.00	Range Science
James S. Schepers	Professor	0.00	0.00	0.00	USDA	Soil Chemistry
John F. Shanahan	Professor	0.00	0.00	0.00	USDA	Crop Physiology
Robert C. Shearman	Professor	0.65	0.15	0.20	0.00	Integrated Turfgrass Management
Roy F. Spalding	Professor	0.90	0.00	0.10	0.00	Hydrochemist, Director, Water Science Lab

[1]Ended research appointment during 2006-2007
[2]Began research appointment during 2006-2007

	Rank	Rsch	Ext	Tch	Other	Area of Responsibility

Agronomy and Horticulture (continued)

James E. Specht	Professor	0.85	0.00	0.15	0.00	Soybean Physiologist-Geneticist
Paul E. Staswick	Professor	0.85	0.00	0.15	0.00	Plant Molecular Biologist
James L. Stubbendieck	Professor	0.25	0.00	0.25	0.50	Range Ecology/Director, Center for Great Plains Studies
Jeanette A. Thurston	Assistant Professor	0.00	0.00	0.00	USDA	Environmental Microbiologist
Gary E. Varvel	Professor	0.00	0.00	0.00	USDA	Soil Management
Kenneth P. Vogel	Professor	0.00	0.00	0.00	USDA	Grass Breeding
Daniel T. Walters	Professor	0.65	0.00	0.35	0.00	Soil Management
Brian J. Weinhold	Assistant Professor	0.00	0.00	0.00	USDA	Soil Fertility
Wallace W. Wilhelm	Professor	0.00	0.00	0.00	USDA	Crop Physiology
Charles S. Wortmann	Associate Professor	0.30	0.70	0.00	0.00	Nutrient Management Specialist
Haishun Yang	Research Assistant Professor	1.00	0.00	0.00	0.00	Simulation Modeling

Animal Science

Donald H. Beermann	Professor	0.35	0.34	0.31	0.00	Head
Mary M. Beck[1]	Professor	0.70	0.00	0.30	0.00	Poultry Physiology
Gary L. Bennett	Professor	0.00	0.00	0.00	USDA	Systems
Dennis R. Brink	Professor	0.30	0.00	0.70	0.00	Ruminant Nutrition
Thomas E. Burkey [2]	Assistant Professor	0.60	0.00	0.40	0.00	Nonruminant Nutrition
Chris R. Calkins	Professor	0.70	0.00	0.30	0.00	Meats
Lane K. Christenson	Professor	0.00	0.00	0.00	Academia	Physiology
Ronald K. Christenson	Professor	0.00	0.00	0.00	USDA	Physiology
Larry V. Cundiff	Professor	0.00	0.00	0.00	USDA	Beef Genetics
Andrea S. Cupp	Assistant Professor	0.70	0.00	0.30	0.00	Beef Physiology
Robert A. Cushman	Professor	0.00	0.00	0.00	USDA	Physiology
Samar A. Elnagar	Professor	0.00	0.00	0.00	Academia	Physiology
Galen E. Erickson	Assistant Professor	0.50	0.40	0.10	0.00	Feedlot Nutrition
Calvin L. Ferrell	Professor	0.00	0.00	0.00	USDA	Nutrition
J. Joe Ford	Professor	0.00	0.00	0.00	USDA	Physiology
Kathryn J. Hanford	Research Assistant Professor	0.80	0.00	0.20	0.00	Statistical Genetics
Thomas G. Jenkins	Professor	0.00	0.00	0.00	USDA	Genetics
Rodger K. Johnson	Professor	0.60	0.00	0.40	0.00	Swine Genetics
Steven J. Jones	Professor	0.35	0.00	0.65	0.00	Meats
Jeffrey F. Keown	Professor	0.30	0.70	0.00	0.00	Dairy Management
Terry J. Klopfenstein	Professor	0.70	0.00	0.30	0.00	Ruminant Nutrition
Richard K. Koelsch	Associate Professor	0.30	0.70	0.00	0.00	Livestock Waste Management
Paul J. Kononoff	Assistant Professor	0.70	0.30	0.00	0.00	Dairy Nutrition
Mohammad Koohmaraie	Professor	0.00	0.00	0.00	USDA	Meats
Larry L. Larson[1]	Associate Professor	0.40	0.00	0.60	0.00	Dairy Physiology
Kreg A. Leymaster	Professor	0.00	0.00	0.00	USDA	Genetics
Donald D. Lunstra[1]	Professor	0.00	0.00	0.00	USDA	Physiology
Roger W. Mandigo	Professor	0.60	0.00	0.40	0.00	Meats
Phillip S. Miller	Professor	0.60	0.00	0.40	0.00	Swine Nutrition
Jess L. Miner	Associate Professor	0.70	0.00	0.30	0.00	Nutritional Biochemistry
Merlyn K. Nielsen	Professor	0.60	0.00	0.40	0.00	Genetics
Rick J. Rasby	Professor	0.25	0.75	0.00	0.00	Beef Management
Thomas A. Rathje	Professor	0.00	0.00	0.00	Industry	Swine Genetics
Gary A. Rohrer	Professor	0.00	0.00	0.00	USDA	Genetics
Sheila E. Scheideler	Professor	0.45	0.50	0.05	0.00	Poultry Management

	Rank	Rsch	Ext	Tch	Other	Area of Responsibility
Animal Science (continued)						
Rick A. Stock	Professor	0.00	0.00	0.00	Industry	Ruminant Nutrition
Mike T. Van Koevering	Professor	0.00	0.00	0.00	Industry	Ruminant Nutrition
L. Dale Van Vleck	Professor	0.05	0.00	0.15	USDA	Genetics
Vincent H. Varel	Professor	0.00	0.00	0.00	USDA	Bacterial Physiology
John S. Weber[1]	Assistant Professor	0.80	0.00	0.20	0.00	Functional Geomics
Tommy L. Wheeler	Professor	0.00	0.00	0.00	USDA	Meats
Brett R. White	Assistant Professor	0.50	0.00	0.50	0.00	Swine Physiology
Jennifer R. Wood[2]	Assistant Professor	0.60	0.00	0.40	0.00	Physiological Genomics

Biochemistry

Donald P. Weeks	Professor	0.80	0.00	0.20	0.00	Head, Plant Molecular Biology
Raymond Chollet	Professor	0.80	0.00	0.20	0.00	Interim Head, Photosynthesis
Ruma Banerjee[1]	Professor	0.85	0.00	0.15	0.00	Mechanistic Enzymology
Joseph J. Barycki	Assistant Professor	0.80	0.00	0.20	0.00	Protein Crystallography
Cheryl Bailey[2]	Assistant Professor	0.20	0.00	0.80	0.00	Protein molecular engineering
Gilles Basset[2]	Assistant Professor	0.80	0.00	0.20	0.00	Protein molecular engineering
Donald F. Becker	Associate Professor	0.80	0.00	0.20	0.00	Protein Electrochemistry
Dmitri Fomenko	Research Assistant Professor	0.00	0.00	0.00	1.00	Molecular Biology
Vadim N. Gladyshev	Professor	0.80	0.00	0.20	0.00	Protein Biochemistry, Selenium
Hwa-Young Kim[1]	Research Assistant Professor	0.00	0.00	0.00	1.00	Redox Biology, Selenium Biochemistry
Jaekwon Lee	Assistant Professor	0.80	0.00	0.20	0.00	Metal Metabolism
John P. Markwell	Professor	0.25	0.00	0.00	0.75	Plant Biochemistry
Sergey V. Novoselov[1]	Research Assistant Professor	0.00	0.00	0.00	1.00	Molecular/Cell Biology
Stephen W. Ragsdale[1]	Professor	0.85	0.00	0.15	0.00	Enzymes
Ashraf Raza	Assistant Research Professor	0.00	0.00	0.00	1.00	Protiomics/Metabolomics
Gautam Sarath	Adjunct Faculty	0.00	0.00	0.00	1.00	Protein Biochemistry
Javier Seravalli[1]	Assistant Research Professor	0.00	0.00	0.00	1.00	Enzymology
Melanie Simpson	Assistant Professor	0.80	0.00	0.20	0.00	Cellular Biochemistry
Madhavan Soundararajan	Senior Lecturer	0.30	0.00	0.70	0.00	Carbon Acquisition Measurement
Robert Spreitzer	Professor	0.85	0.00	0.15	0.00	Plant Molecular Genetics
Julie M. Stone	Assistant Professor	0.37	0.00	0.00	0.67	Plant Molecular Biology
Mark A. Wilson	Assistant Professor	0.80	0.00	0.20	0.00	Structural Biology
Charles Wood	Professor	0.25	0.00	0.00	0.75	Virology
Mamoru Yamanishi	Assistant Research Professor	0.00	0.00	0.00	1.00	Enzymology

Biological Systems Engineering

Ronald E. Yoder	Professor	0.35	0.50	0.15	1.00	Head, Irrigation and Water Resources Engineering
Viacheslav I. Adamchuk	Assistant Professor	0.50	0.30	0.20	0.00	Precision Agriculture
Alejandro Amezquita	Adjunct Assistant Professor	0.00	0.00	0.00	Industry	Food Safety Engineering
Gregory R. Bashford	Assistant Professor	0.50	0.00	0.50	0.00	Biomedical Engineering
David Billesbach	Adjunct Assistant Professor	0.00	0.00	0.00	1.00	Gaseous Emissions
Rhonda M. Brand	Adjunct Assistant Professor	0.00	0.00	0.00	Industry	Evanston Northwestern Healthcare Research Institute

[1]Ended research appointment during 2006-2007
[2]Began research appointment during 2006-2007

Biological Systems Engineering (continued)

	Rank	Rsch	Ext	Tch	Other	Area of Responsibility
Tami Brown-Brandl	Adjunct Assistant Professor	0.00	0.00	0.00	USDA	Animal, Environmental and Waste Management
Roger A. Eigenberg	Adjunct Assistant Professor	0.00	0.00	0.00	USDA	Animal, Environmental and Waste Management
Dean E. Eisenhauer	Professor	0.50	0.00	0.50	0.00	Hydrology and Irrigation
Qi Fang	Adjunct Assistant Professor	0.00	0.00	0.00	Industry	Industrial Ag Products
Sandun Fernando	Adjunct Assistant Professor	0.00	0.00	0.00	Industry	Bioenergy, Biomaterials, Biolubricants
Thomas G. Franti	Associate Professor	0.25	0.75	0.00	0.00	Surface Water Management
Girish Ganjyal	Adjunct Assistant Professor	0.00	0.00	0.00	Industry	Food and Bioprocess Engineering
Aris Gennadios	Adjunct Assistant Professor	0.00	0.00	0.00	Industry	Pharmaceutical Manufacturing
Viswas Ghorpade	Adjunct Assistant Professor	0.00	0.00	0.00	Industry	Hill's Pet Nutrition, Inc.
John E. Gilley	Adjunct Professor	0.00	0.00	0.00	USDA	Soil Erosion and Waste Management
Junjie Guian[2]	Assistant Professor	0.00	0.00	0.00	Industry	Food and Bioprocess Engineering
Milford A. Hanna	Professor	0.55	0.00	0.00	0.45	Food and Bioprocess Engineering
Terry A. Howell	Professor	0.00	0.00	0.00	USDA	Irrigation Management
Roger M. Hoy[2]	Professor	0.35	0.00	0.15	0.50	Machine Design and Testing
Keum Taek Hwang	Assistant Professor	0.00	0.00	0.00	Industry	Food Processing
Ayse Irmak	Research Assistant Professor	0.00	0.00	0.00	1.00	Crop Modeling
Suat Irmak	Assistant Professor	0.40	0.60	0.00	0.00	Irrigation Management and Soil and Water Engineering
Erkan Istanbulluoglu[2]	Associate Professor	0.30	0.00	0.00	0.70	Surface Hydrology
David D. Jones	Associate Professor	0.35	0.00	0.65	0.00	Engineering and Modeling of Biological Systems
Michael F. Kocher	Associate Professor	0.40	0.00	0.60	0.00	Sensors and Controls Engineering
Richard K. Koelsch	Associate Professor	0.21	0.49	0.00	0.30	Livestock Bioenvironmental Engineering
Derrel L. Martin	Professor	0.50	0.35	0.15	0.00	Irrigation and Water Resources Engineering
George E. Meyer	Professor	0.60	0.00	0.40	0.00	Sensors and Machine Vision
John A. Nienaber	Professor		0.00	0.00	USDA	Livestock Environment
Dennis D. Schulte	Professor	0.50	0.00	0.50	0.00	Pollution Control and Energy Systems
Jeyamkondan Subbiah	Assistant Professor	0.35	0.00	0.20	0.45	Food and Bioprocess Engineering
Lijun Wang	Assistant Professor	0.00	0.00	0.00	1.00	Food and Bioprocess Engineering
Curtis L. Weller	Professor	0.60	0.00	0.20	0.20	Food and Bioprocess Engineering
Wayne Woldt	Associate Professor	0.25	0.35	0.15	0.25	Bioenvironmental Engineering
Woodbury, Bryan	Assistant Professor	0.00	0.00	0.00	USDA	Animal, Environment and Waste Management
Yiqi Yang	Professor	0.15	0.00	0.00	0.85	Textile Chemistry and Polymer and Fiber Sciences

Entomology

Gary Brewer[2]	Professor and Head					Head
Lisa M. Baird	Professor	0.00	0.00	0.00	U San Diego	Insect/Plant Interactions
Frederick P. Baxendale	Professor	0.25	0.75			Turf Insects
Dennis R. Berkebile	Assistant Professor	0.00	0.00	0.00	USDA	Livestock Entomology
John D. Burd	Professor	0.00	0.00	0.00	USDA	Insect/Plant Interactions
David O. Carter[2]	Assistant Professor	0.30	0.00	0.70	0.00	Forensic Science
Michael D. Culy	Associate Professor	0.00	0.00	0.00	Industry	Global Regulatory Molecule
Stephen D. Danielson	Associate Professor	0.40	0.00	0.60	0.00	Field Crop Insect Ecology

Entomology (continued)

	Rank	Rsch	Ext	Tch	Other	Area of Responsibility
Odair Fernandes	Associate Professor	0.00	0.00	0.00	FCAV/UNESP	Insect Ecology
John E. Foster	Professor	0.50	0.50	0.00	0.00	Insect Genetics
Neal H. Haskell	Professor	0.00	0.00	0.00	St. Joseph's	Forensic Entomology
E.A. Henrichs	Professor	0.00	0.00	0.00	1.00	Insect/Plant Interactions/IPM Rice Insects
Tiffany M. Heng-Moss	Associate Professor	0.20	0.20	0.60	0.00	Plant Resistance to Insects, Insect/Plant Interaction
Leon G. Higley	Professor	0.80	0.00	0.20	0.00	Insect Ecology
W. Wyatt Hoback	Associate Professor	0.00	0.12	0.13	0.75	Insect Ecology and Physiology
Scott H. Hutchins	Professor	0.00	0.00	0.00	Industry	Integrated Pest Management
David J. Isenhour	Professor	0.00	0.00	0.00	Industry	Lead for International Trade Integration
Shripat T. Kamble	Professor	0.36	0.54	0.00	0.00	Urban Pest Management
Lance J. Meinke	Professor	0.80	0.00	0.20	0.00	Insect Ecology and Behavior
Daniel J. Moellenbeck	Assistant Professor	0.00	0.00	0.00	Industry	Plant Resistance to Insects
Jaime Molina-Ochoa	Professor	0.00	0.00	0.00	Univ. de Colima	Biological Control
Frank B. Peairs	Professor	0.00	0.00	0.00	CSU	Insect/Plant Interactions
Robert K. D. Peterson	Associate Professor	0.00	0.00	0.00	MSU	Integrated Pest Management
Brett C. Ratcliffe	Professor & Curator	0.80	0.00	0.20	0.00	Systematics of Scarabaeidae
Gautam Sarath	Professor	0.00	0.00	0.00	USDA	Biochemistry and Molecular Biology
Blair D. Siegfried	Professor	0.80	0.00	0.20	0.00	Insect Toxicology
Steven R. Skoda	Associate Professor	0.00	0.00	0.00	USDA	Livestock Entomology
David B. Taylor	Associate Professor	0.00	0.00	0.00	USDA	Livestock Entomology
Robert J. Wright	Professor	0.50	0.50	0.00	0.00	Field Crops Entomology, Integrated Pest Management, Biological Control

Food Science and Technology

Rolando A. Flores	Professor	0.40	0.34	0.26	0.00	Department Head/Center Director
Andrew K. Benson	Associate Professor	0.60	0.00	0.40	0.00	Food Microbiology
Lloyd B. Bullerman	Professor	0.75	0.10	0.15	0.00	Food Microbiology/Mycology
Susan B. Cuppett	Professor	0.40	0.00	0.60	0.00	Food Lipids
Richard Goodman	Research Professor	0.00	0.00	0.00	1.00	Food Allergy Research
Milford A. Hanna	Professor	0.20	0.00	0.00	0.80	Food and Bioprocess Engineering
Susan Hefle[1]	Associate Professor	1.00	0.00	0.00	0.00	Food Allergy Research
Robert W. Hutkins	Professor	0.65	0.00	0.35	0.00	Food Biotechnology
David S. Jackson	Professor	0.60	0.30	0.10	0.00	Cereals/Oilseeds Processing
Vicki Schlegel	Assistant Professor	0.90	0.00	0.10	0.00	Quality Assurance
Durward A. Smith	Associate Professor	0.25	0.60	0.15	0.00	Horticultural Food Crops Processing
Jeyamkondan Subbiah	Assistant Professor	0.45	0.00	0.00	0.55	Food and Bioprocess Engineering
Steve L. Taylor	Professor	0.40	0.34	0.20	0.00	Food Toxicology, Food Allergens
Harsharvardhan Thippareddi	Assistant Professor	0.30	0.70	0.00	0.00	Food Safety/Food Microbiology
Randy L. Wehling	Professor	0.50	0.00	0.50	0.00	Food Analysis
Curtis L. Weller	Professor	0.60	0.00	0.40	0.00	Food and Bioprocess Engineering
Michael G. Zeece	Professor	0.75	0.00	0.25	0.00	Food Protein Chemistry
Chaomei Zhang	Senior Research Associate	0.00	0.00	0.00	1.00	Food Microbiology

[1]Ended research appointment during 2006-2007
[2]Began research appointment during 2006-2007

	Rank	Rsch	Ext	Tch	Other	Area of Responsibility

Plant Pathology

Anne K. Vidaver[1]	Professor and Head	0.75	0.15	0.10	0.00	Head
James R. Steadman[2]	Professor and Head	0.09	0.10	0.81	0.00	Head, Epidemiology of Vegetable Diseases
James Alfano	Associate Professor	0.00	0.00	0.00	1.00	PSI Genetics of Plant-Bacterial Interactions
David Dunigan	Research Assistant Professor	0.00	0.00	0.00	1.00	Algal Viruses
Roy C. French	Associate Professor	0.00	0.00	0.00	USDA	Viruses and Nucleic Acids
Deanna L. Funnell	Assistant Professor	0.00	0.00	0.00	USDA	Sorghum Pathology
Loren Giesler	Associate Professor	0.25	0.75	0.00	0.00	Soybean, Alfalfa and Landscape Ornament
Steve Harris	Assistant Professor	0.00	0.00	0.00	1.00	PSI Genetics of Fungal Morphogenesis
Tamra A. Jackson	Assistant Professor	0.25	0.75	0.00	0.00	Corn and Sorghum
Byeong-ryool Jeong	Research Assistant Professor	0.00	0.00	0.00	1.00	Molecular Biology
Ming Kang	Research Assistant Professor	0.00	0.00	0.00	1.00	Algal Viruses
Amit Mitra	Associate Professor	0.90	0.00	0.10	0.00	Plant Vector/Plant Transformation
James E. Partridge	Professor	0.25	0.00	0.75	0.00	Host/Parasite Interactions/Stress
Thomas O. Powers	Professor	0.90	0.00	0.10	0.00	Nematology
Drake C. Stenger	Associate Professor	0.00	0.00	0.00	USDA	Wheat Virology
James L. Van Etten	Professor	0.90	0.00	0.00	1.00	Molecular Virology
Stephen Wegulo	Assistant Professor	0.25	0.75	0.00	0.00	Small Grains, Forages, and Ornamental Plants
Gary Y. Yuen	Professor	0.85	0.00	0.15	0.00	Soilborne Diseases

School of Natural Resources

Mark S. Kuzila	Professor and Director	0.58	0.26	0.16	0.00	Head, Soil Science/Survey
Craig R. Allen	Adjunct Associate Professor	0.00	0.00	0.00	1.00	Unit Leader, NE Coop Fish and Wildlife Research Unit
Tala Awada	Assistant Professor	0.80	0.00	0.20	0.00	Plant Ecophysiology
Jerry F. Ayers	Associate Professor	0.75	0.00	0.00	0.25	Environmental Geophysics, Hydrogeology
Tadd Barrow[2]	Assistant Educator	0.50	0.50	0.00	0.00	Lake Water Quality Education
Francis Belohlavy	Assistant Geoscientist	0.00	0.00	0.00	1.00	Soil Science/Survey
James R. Brandle	Professor	0.70	0.00	0.30	0.00	Forestry/Windbreaks
Mark Burbach	Assistant Geoscientist	0.75	0.25	0.00	0.00	Environmental Monitoring, Human Dimensions
Marvin Carlson	Professor	1.00	0.00	0.00	0.00	Geology/Stratigraphy, Tectonics
Xun-Hong Chen	Professor	1.00	0.00	0.00	0.00	Hydrogeology
Steven D. Comfort	Professor	0.75	0.15	0.10	0.00	Soil Environmental Chemist
Kenneth Dewey	Professor	0.06	0.19	0.00	0.75	Meteorology/Climatology; Climate Variations, Severe Weather
Allen Dutcher[2]	Associate Geoscientist	0.25	0.75	0.00	0.00	Nebraska Climate Survey
Duane Eversoll	Professor	0.00	0.00	0.00	1.00	Engineering and Environmental Geology
Patricia Freeman	Professor	0.75	0.00	0.25	0.00	Mammalian Biology; Vertebrate Zoology
Anatoly A. Gitelson	Professor	0.75	0.00	0.00	0.25	Remote Sensing
James Goeke	Professor	0.25	0.75	0.00	0.00	Groundwater Geology
David C. Gosselin	Professor	0.60	0.10	0.30	0.00	Earth Science

School of Natural Resources (continued)

	Rank	Rsch	Ext	Tch	Other	Area of Responsibility
Paul Hanson	Assistant Professor	1.00	0.00	0.00	0.00	Cenozoic Stratigraphy
Steve Hartung	Assistant Geoscientist	0.00	0.00	0.00	1.00	Soil Research
F. Edwin Harvey	Associate Professor	0.80	0.00	0.20	0.00	Hydrogeology
Michael J. Hayes	Associate Professor	0.00	0.00	0.00	1.00	Agricultural Climatology
Geoffrey M. Henebry[1]	Associate Professor	0.00	0l00	0.00	1.00	Landscape Ecology/Remote Sensing
Kyle D. Hoagland	Professor	0.35	0.00	0.15	0.50	Limnology & Director, Water Center
Aris Holz	Research Assistant Professor	0.00	0.00	0.00	1.00	Water Resources
John Holz	Research Assistant Professor	0.12	0.13	0.15	0.60	Limnology/Lake Management
Qi Hu	Associate Professor	0.55	0.20	0.00	0.25	Agricultural Climatology
Kenneth G. Hubbard	Professor	0.07	0.20	0.10	0.30	Agricultural Climatology
Scott E. Hygnstrom	Professor	0.25	0.35	0.25	0.15	Integrated Pest Management/Wildlife Damage Management
J. Michael Jess	Senior Lecturer	0.15	0.65	0.20	0.00	Geology
Robert M. Joeckel	Associate Professor	0.75	0.25	0.00	0.00	Geology/Regional Sedimentology and Stratigraphy
Ron J. Johnson	Professor	0.31	0.69	0.00	0.00	Wildlife Science
Cody L. Knutson	Research Assistant Geoscientist	0.00	0.00	0.00	1.00	Water Resources
Susan Lackey	Geoscientist	0.75	0.25	0.00	0.00	Groundwater Geology
John Lenters	Associate Professor	0.68	0.00	0.12	0.20	Climate Modeling
Xiaomao Lin	Research Assistant Professor	0.00	0.00	0.00	1.00	Atmospheric Scientist
James W. Merchant	Professor	0.60	0.00	0.40	0.00	Geographic Information Systems
Deepak Mishra	Research Assistant Professor	0.00	0.00	0.00	1.00	Remote Sensing/Geographic Information Systems (GIS)
Sunil Narumalani	Associate Professor	0.40	0.00	0.00	0.60	Remote Sensing/GIS
Robert Oglesby	Professor	0.30	0.00	0.00	0.70	Climate Modeling
Mark Pegg	Assistant Professor	0.50	0.00	0.50	0.00	Fisheries Ecology
Rick Perk	Assistant Geoscientist	0.00	0.00	0.00	1.00	Remote Sensing/GIS/Earth Science Education
Kevin Pope	Adj Associate Professor	0.00	0.00	0.00	1.00	Fish & Wildlife Research
Larkin A. Powell	Associate Professor	0.40	0.00	0.60	0.00	Conservation Biology/Animal Ecology
Karl Reinhard	Professor	0.00	0.00	0.00	1.00	Human Dimensions, Environmental Archaeology
Donald C. Rundquist	Professor	0.65	0.00	0.35	0.00	Remote Sensing
Michele M. Schoeneberger	Adjunct Assistant Professor	0.00	0.00	0.00	USDA	Forestry
Karina Schoengold	Assistant Professor	0.75	0.00	0.25	0.00	Environmental Economist
Patrick J. Shea	Professor	0.80	0.10	0.10	0.00	Environmental Chemistry of Xenobiotics
Steven Sibray	Geoscientist	0.75	0.25	0.00	0.00	Groundwater Geology
Rachel A. Simpson	Research Assistant Professor	0.33	0.00	0.00	0.67	Natural Resources Data Specialist
Joseph M. Skopp	Associate Professor	0.50	0.00	0.50	0.00	Soil Physics
Daniel D. Snow	Research Assistant Professor	0.10	0.00	0.00	0.90	Hydrogeochemistry
Mary E. Spalding	Professor	1.00	0.00	0.00	0.00	Water Quality
Venkataramana Sridhar	Research Assistant Professor	0.00	0.00	0.00	1.00	Hydrology/Mesoscale Modeling
Scott Summerside	Associate Geoscientist	0.75	0.25	0.00	0.00	Groundwater Geology
Andrew Suyker	Research Assistant Professor	0.00	0.00	0.00	1.00	Micrometeorology
Mark Svoboda	Associate Geoscientist	0.00	0.00	0.00	1.00	Climatology
James Swinehart	Professor	0.85	0.00	0.00	0.15	Geology/Stratigraphy, Sedimentology
Jozsef Szilagyi	Associate Professor	0.33	0.00	0.00	0.00	Water Science/Watershed Hydrology
Tsegaye Tadesse	Assistant Geoscientist	0.00	0.00	0.00	1.00	Climatology

[1]Ended research appointment during 2006-2007
[2]Began research appointment during 2006-2007

	Rank	Rsch	Ext	Tch	Other	Area of Responsibility

School of Natural Resources (continued)

Brigitte Tenhumberg	Research Assistant Professor	0.00	0.00	0.00	1.00	Theoretical Ecology
Steven Thomas	Assistant Professor	0.80	0.00	0.20	0.00	River/Stream Ecology
Richard Andrew J. Tyre	Assistant Professor	0.60	0.00	0.40	0.00	Wildlife Population Ecology
Shashi B. Verma	Professor	0.85	0.00	0.15	0.00	Micrometeorology/Carbon Dioxide and Water Vapor Exchange
Elizabeth A. Walter-Shea	Professor	0.65	0.00	0.35	0.00	Agricultural Meteorology/Solar Radiation Interactions
Brian Wardlow	Research Assistant Professor	0.00	0.00	0.00	1.00	Remote Sensing Science
David A. Wedin	Associate Professor	0.60	0.00	0.40	0.00	Ecology
Albert Weiss	Professor	0.85	0.00	0.15	0.00	Agricultural Meteorology
Donald A. Wilhite	Professor	0.87	0.00	0.10	0.03	Agricultural Climatology
Jinsheng You	Research Assistant Professor	0.00	0.00	0.00	1.00	Climatology
Xinhua Zhou	Research Assistant Professor	0.00	0.00	0.00	1.00	Ecophysiologist/Modeler

Statistics

Walter W. Stroup	Professor	0.25	0.00	0.25	0.50	Chair, Statistical Consultant
Chris Bilder	Associate Professor	0.25	0.00	0.20	0.00	Statistical Consultant
Erin Blankenship	Associate Professor	0.55	0.00	0.45	0.00	Statistical Consultant
Kent Eskridge	Professor	0.65	0.00	0.35	0.00	Statistical Consultant
Stephen D. Kachman	Professor	0.50	0.00	0.50	0.00	Statistical Consultant
David B. Marx	Professor	0.55	0.00	0.45	0.00	Statistical Consultant
Anne Parkhurst	Professor	0.55	0.00	0.45	0.00	Statistical Consultant
Dong Wang[1]	Assistant Professor	0.40	0.00	0.15	0.45	Statistical Consultant

Veterinary and Biomedical Sciences

David Hardin[2]	Professor and Head	0.39	0.09	0.52	0.00	Head
Raul G. Barletta	Professor	0.90	0.00	0.10	0.00	Molecular Biology
Bruce W. Brodersen	Research Associate Professor	0.00	0.00	0.00	1.00	Diagnostic Pathology
Michael P. Carlson	Lecturer	0.85	0.00	0.15	0.00	Analytical Toxicology
Subash Das	Research Assistant Professor	0.00	0.00	0.00	1.00	Veterinary Molecular Virology
Alan R. Doster	Professor	0.00	0.00	0.00	1.00	Diagnostic Pathology
Gerald E. Duhamel	Professor	0.80	0.00	0.10	0.10	Diagnostic/Research Pathology
M. Rohan Fernando	Research Assistant Professor	0.00	0.00	0.00	1.00	Molecular Biology/Biochemistry
Dicky D. Griffin	Professor	0.20	0.30	0.50	0.00	Beef Cattle Medicine
Clinton J. Jones	Professor	0.90	0.00	0.10	0.00	Molecular Virology
Clayton L. Kelling	Professor	0.65	0.00	0.35	0.00	Research Virology
Marjorie F. Lou	Professor	0.50	0.00	0.00	0.50	Research Biochemistry
D. Scott McVey[2]	Associate Professor	0.25	0.00	0.25	0.50	Microbiology
Rodney A. Moxley	Professor	0.90	0.00	0.10	0.00	Diagnostic/Research Pathology
Jeff D. Ondrak[2]	Lecturer	0.50	0.00	0.50	0.00	Ruminant Nutrition
Fernando A. Osorio	Professor	0.40	0.00	0.00	0.60	Diagnostic/Research Virology
Asit K. Pattnaik	Professor	1.00	0.00	0.00	0.00	Virology
Douglas G. Rogers	Professor	0.00	0.00	0.00	1.00	Diagnostic/Research Pathology
Gary P. Rupp	Professor	0.50	0.00	0.50	0.00	Director, GPVEC, Beef Cattle Medicine
John A. Schmitz	Professor	0.55	0.00	0.45	0.00	Veterinary Pathology
David J. Steffen	Associate Professor	0.00	0.00	0.00	1.00	Diagnostic Research Pathology
David R. Smith	Associate Professor	0.25	0.75	0.00	0.00	Dairy and Beef Cattle Health
Greg A. Somerville	Assistant Professor	0.20	0.00	0.00	0.80	Microbiology
Joe Y. Zhou	Research Associate Professor	0.00	0.00	0.00	1.00	Cell Biology/Bio-Imaging

Education and Human Sciences Departments

Child, Youth and Family Studies

	Rank	Rsch	Ext	Tch	Other	Area of Responsibility
Julie M. Johnson	Professor and Chair	0.11	0.12	0.00	0.77	Chair
Douglas A. Abbott	Professor	0.25	0.00	0.00	0.75	Youth at Risk
Richard J. Bischoff	Associate Professor	0.25	0.00	0.00	0.75	Collaborative Health Care
Susan Churchill	Associate Professor	0.24	0.00	0.00	0.76	Families' Economic Well-Being
Rochelle Dalla	Associate Professor	0.25	0.00	0.00	0.75	Migration
Maria de Guzman	Assistant Professor	0.25	0.75	0.00	0.00	Adolescent Development
John D. DeFrain	Professor	0.25	0.75	0.00	0.00	Building Strong Families
Carolyn Edwards	Professor	0.25	0.00	0.00	0.75	Cultural Diversity/Early Childhood
Cody Hollist	Assistant Professor	0.25	0.00	0.00	0.75	At-Risk Adolescents; Latino Families
Cathey Huddleston-Casas	Assistant Professor	0.25	0.00	0.00	0.75	Families' Economic Well-Being
Helen Rakes	Professor	0.20	0.00	0.00	0.80	Early Childhood/Child Care Assessment
Kathy Prochaska-Cue	Associate Professor	0.12	0.75	0.00	0.13	Family Financial Management
Yan Xia	Assistant Professor	0.11	0.00	0.00	0.89	Risk and Resiliency of Youth

Nutrition and Health Sciences

Marilynn Schnepf	Professor	0.40	0.10	0.00	0.50	Chair
Julie A. Albrecht	Associate Professor	0.25	0.75	0.00	0.00	Food Safety
Timothy Carr	Professor	0.50	0.00	0.00	0.50	Nutritional Biochemistry
Judy Driskell	Professor	0.50	0.00	0.00	0.50	Nutrition
Nancy M. Lewis	Professor	0.44	0.00	0.00	0.56	Nutrition
Kaye Stanek-Krogstrand	Associate Professor	0.25	0.00	0.00	0.75	Nutrition
Janos Zempleni	Associate Professor	0.50	0.00	0.00	0.50	Nutritional Biochemistry

Textiles, Clothing and Design

Michael James	Professor and Chair	0.00	0.10	0.10	0.80	Chair
Patricia Cox Crews	Professor	0.25	0.00	0.00	0.75	Textile Conservation and Science
Nancy Miller	Professor	0.00	0.00	0.00	1.00	Merchandising
Shirley M Niemeyer	Professor	0.25	0.75	0.00	0.00	Housing and Environment
Yiqi Yang	Professor	0.35	0.00	0.00	0.65	Textile Science

[1]Ended research appointment during 2006-2007
[2]Began research appointment during 2006-2007

Off-Campus Research Centers

Northeast Research and Extension Center

	Rank	Rsch	Ext	Tch	Other	Area of Responsibility
John F. Witkowski	Professor and Director	0.25	0.75	0.00	0.00	Director
Michael C. Brumm[1]	Professor	0.50	0.50	0.00	0.00	Animal Science (Swine Production)
Thomas E. Hunt	Associate Professor	0.50	0.50	0.00	0.00	Entomology (IPM)
Stevan Knezevic	Associate Professor	0.50	0.50	0.00	0.00	Agronomy and Horticulture (Weed Science)
William L. Kranz	Associate Professor	0.25	0.75	0.00	0.00	Biological Systems Engineering (Water Quality)
Donald G. Levis	Professor	0.25	0.75	0.00	0.00	Animal Science (Swine Production)
Terry L. Mader	Professor	0.50	0.50	0.00	0.00	Animal Science (Beef Cattle)
Charles A. Shapiro	Professor	0.50	0.50	0.00	0.00	Agronomy and Horticulture (Soils and Crop Nutrition)
David P. Shelton	Professor	0.50	0.50	0.00	0.00	Biological Systems Engineering (Soil Conservation)

Panhandle Research and Extension Center

Charles A. Hibberd	Professor and Director	0.45	0.55	0.00	0.00	Director
David D. Baltensperger[1]	Professor	0.75	0.25	0.00	0.00	Agronomy/Horticulture (Crop Breeding)
Linda S. Boeckner	Professor	0.25	0.75	0.00	0.00	Nutrition and Health Sciences (Nutrition and Dietetics)
Robert M. Harveson	Associate Professor	0.50	0.50	0.00	0.00	Plant Pathology (Specialty Crop Disease)
Gary L. Hein	Professor	0.50	0.50	0.00	0.00	Entomology (Entomology)
Gary W. Hergert	Professor	0.50	0.50	0.00	0.00	Agronomy/Horticulture (Soils)
Drew J. Lyon	Professor	0.50	0.50	0.00	0.00	Agronomy/Horticulture (Dryland Crops)
Alexander D. Pavlista	Professor	0.25	0.75	0.00	0.00	Agronomy/Horticulture (Potatoes)
Patrick E. Reece	Professor	0.50	0.50	0.00	0.00	Agronomy/Horticulture (Range Ecology)
Ivan G. Rush	Professor	0.25	0.75	0.00	0.00	Animal Science (Beef Cattle)
John A. Smith	Professor	0.50	0.50	0.00	0.00	Biological Systems Engineering (Machinery Systems)
Carlos A. Urrea	Assistant Professor	0.75	0.25	0.00	0.00	Agronomy/Horticulture (Dry Bean Breeding)
Robert G. Wilson	Professor	0.50	0.50	0.00	0.00	Agronomy/Horticulture (Weed Science)
C. Dean Yonts	Associate Professor	0.50	0.50	0.00	0.00	Biological Systems Engineering (Irrigation)

West Central Research and Extension Center

Don C. Adams	Professor and Director	0.37	0.38	0.00	0.25	Director, Animal Science (Range Cattle Nutrition)
John B. Campbell[1]	Professor	0.25	0.25	0.00	0.00	Entomology (Livestock/Crops)
Rick N. Funston	Associate Professor	0.40	0.60	0.00	0.00	Animal Science (Reproductive Physiology)
Dale T. Lindgren	Professor	0.50	0.50	0.00	0.00	Agronomy/Horticulture (Ornamentals)
Leslie A. Stalker[2]	Assistant Professor	0.50	0.50	0.00	0.00	Animal Science (Animal Nutrition)
Matthew C. Stockton	Assistant Professor	0.50	0.50	0.00	0.00	Agricultural Economics
David D. Tarkalson[1]	Assistant Professor	0.50	0.50	0.00	0.00	Agronomy/Horticulture (Soils)
Simon van Donk[2]	Assistant Professor	0.50	0.05	0.00	0.00	Biological Systems Engineering (Water Management)
Jerry Volesky	Associate Professor	0.50	0.50	0.00	0.00	Agronomy/Horticulture (Range Management)

Interdisciplinary Activities

Agricultural Research Division

	Rank	Rsch	Ext	Tch	Other	Area of Responsibility
Gary L. Cunningham	Professor	1.00	0.00	0.00	0.00	Dean and Director
Z B Mayo	Professor	1.00	0.00	0.00	0.00	Associate Dean and Director
Daniel Duncan		1.00	0.00	0.00	0.00	Assistant Dean and Director
Marjorie J. Kostelnik	Professor	0.12	0.13	0.00	0.75	Associate Dean and Director

Biotechnology Center

Michael Fromm	Professor	0.48	0.00	0.00	0.52	Director
Thomas Clemente	Associate Professor	0.60	0.00	0.00	0.40	Plant Transformation

Center for Applied Rural Innovation

Alan Baquet	Professor	0.00	0.00	0.00	1.00	Director

Center for Grassland Studies

Martin Massengale	Professor	0.25	0.00	0.00	0.75	Director

Industrial Agricultural Rural Innovation

Milford Hanna	Professor	0.25	0.00	0.00	0.75	Director

Plant Science Initiative

Sally Mackenzie	Professor	0.60	0.00	0.00	0.40	Director, Plant Genomics
James R. Alfano	Associate Professor	0.88	0.12	0.00	0.00	Microbial Genetic
Thomas Clemente	Associate Professor	0.60	0.00	0.00	0.40	Plant Transformation
Michael Fromm	Professor	0.52	0.00	0.00	0.48	Biochemical Genetics
Steven Harris	Assistant Professor	1.00	0.00	0.00	0.00	Fungal Genetics
Julie M. Stone	Assistant Professor	0.63	0.00	0.00	0.37	Plant Molecular Biology

Water Center

Kyle D. Hoagland	Professor	0.25	0.00	0.25	0.50	Director
J. Michael Jess	Lecturer	0.00	0.00	0.00	1.00	Associate Director

The Agricultural Research Division hosted 54 visiting scientists and 53 research associates to the campus in 2006-2007. ARD research is complemented and enhanced by these collaborating scientists — it is through the sharing of knowledge and expertise that the field of science is advanced.

Visiting Scientists

Agronomy and Horticulture

Visiting Scientist: Anderson Machado de Mello
State/Country: Brazil
Expertise/Discipline: Floriculture on penstemon

Biochemistry

Visiting Scientist: Chris J. Chastain
State/Country: Minnesota
Expertise/Discipline: Plant biochemistry/molecular biology

Visiting Scientist: Patricia C. Dos Santos
State/Country: Brazil
Expertise/Discipline: Metalloenzyme maturation

Visiting Scientist: Gloria Esquivel
State/Country: Portugal
Expertise/Discipline: Plant biochemistry/molecular biology

Visiting Scientist: Hwa Young Son
State/Country: Korea
Expertise/Discipline: Pathology

Visiting Scientist: Victor Vitvitsky
State/Country: Russia
Expertise/Discipline: Sulfa biochemistry

Biological Systems Engineering

Visiting Scientist: Abbas Hemmat
State/Country: Iran
Expertise/Discipline: Agricultural engineering/tillage and planting systems

Entomology

Visiting Scientist: Odair A. Fernandes
State/Country: Brazil
Expertise/Discipline: Biological control/IPM

Plant Pathology

Visiting Scientist: Natthiya Buensanteai
State/Country: Thailand
Expertise/Discipline: Plant bacteriology

Visiting Scientist: Cafer Eken
State/Country: Turkey
Expertise/Discipline: Mycology and plant pathology

Visiting Scientist: Graciela Godoy-Lutz
State/Country: Dominican Republic
Expertise/Discipline: Plant pathology

Visiting Scientist: Jigang Han
State/Country: China
Expertise/Discipline: Gene silencing

School of Natural Resources

Visiting Scientist: Ghada Al-Naber
State/Country: Jordan
Expertise/Discipline: Agricultural policy

Visiting Scientist: Mousa Alwadi
State/Country: Jordan
Expertise/Discipline: Agricultural policy

Visiting Scientist: M.S. Baloch
State/Country: Washington, DC
Expertise/Discipline: Water rights, engineering

Visiting Scientist: Asid Bhatti
State/Country: Japan
Expertise/Discipline: Civil engineering

Visiting Scientist: Jesslyn Brown
State/Country: South Dakota
Expertise/Discipline: Remote sensing

Visiting Scientist: Tom Casadevall
State/Country: Colorado
Expertise/Discipline: Hydrology

Visiting Scientist: Dick Clark
State/Country: Nebraska
Expertise/Discipline: Agricultural economics

Visiting Scientist: Brian Cosgrove
State/Country: Maryland
Expertise/Discipline: Remote sensing

Visiting Scientist: Heidi Cullen
State/Country: Georgia
Expertise/Discipline: Climatology/ocean-atmosphere dynamics

Visiting Scientist: Randy Dole
State/Country: Colorado
Expertise/Discipline: Climatology

Visiting Scientist: Barry Dunn
State/Country: Texas
Expertise/Discipline: Ranch management

Visiting Scientist: Lenore Fahrig
State/Country: Canada
Expertise/Discipline: Biology and landscape ecology

Visiting Scientist: Roger Gates
State/Country: South Dakota
Expertise/Discipline: Range management

Visiting Scientist: Hua Guo
State/Country: China
Expertise/Discipline: Climate and land-use effects on basin stream flows/numerical modeling/ hydrology/natural resources management

Visiting Scientist: Kyuha Han
State/Country: Korea
Expertise/Discipline: Civil and environmental engineering

Visiting Scientist: Qasem Irsheadat
State/Country: Jordan
Expertise/Discipline: Engineering

Visiting Scientist: Timothy L. Killeen
State/Country: Colorado
Expertise/Discipline: Physics, atomic and molecular physics

Visiting Scientist: Doug Kluck
State/Country: Missouri
Expertise/Discipline: Hydrology/climatology

Visiting Scientist: Brant Liebmann
State/Country: Colorado
Expertise/Discipline: Climatology

Visiting Scientist: Vikram Mehta
State/Country: Maryland
Expertise/Discipline: Atmospheric physics

Visiting Scientist: Seigo Nasu
State/Country: Japan
Expertise/Discipline: Civil engineering

Visiting Scientist: Son Nghiem
State/Country: California
Expertise/Discipline: Remote sensing

Visiting Scientist: Eni Njoki
State/Country: California
Expertise/Discipline: Remote sensing

Visiting Scientist: SVRK Prabhakar
State/Country: Japan
Expertise/Discipline: Climate change and disaster management

Visiting Scientist: Kelly Redmond
State/Country: Nevada
Expertise/Discipline: Climatology

Visiting Scientist: Norman Rosenberg
State/Country: Maryland
Expertise/Discipline: Climatology

Visiting Scientist: Abdus Salam
State/Country: Bangladesh
Expertise/Discipline: Applied chemistry

Visiting Scientist: Mohammad Semawi
State/Country: Jordan
Expertise/Discipline: Meteorology

Visiting Scientist: Alexander Smart
State/Country: South Dakota
Expertise/Discipline: Range science

Visiting Scientist: Jinxi Song
State/Country: China
Expertise/Discipline: Hydrogeology

Visiting Scientist: Robert Sudmeyer
State/Country: Australia
Expertise/Discipline: Agroforestry and sustainable agriculture

Visiting Scientist: Robert Swanson
State/Country: Nebraska
Expertise/Discipline: Hydrology

Visiting Scientists: David S. Torain II
State/Country: Virginia
Expertise/Discipline: Bioeconomic modelling of fish populations

Visiting Scientist: Jerry Unterreiner
State/Country: Indiana
Expertise/Discipline: Geology

Visiting Scientist: Jim Verdin
State/Country: South Dakota
Expertise/Discipline: Remote sensing

Education and Human Sciences Department

Textiles, Clothing and Design

Visiting Scientists: Ying Li
State/Country: China
Expertise/Discipline: Plant protein crosslinkings

Visiting Scientists: Taejung Kim
State/Country: South Korea
Expertise/Discipline: Textile modeling systems

Visiting Scientists: Daesik Yun
State/Country: South Korea
Expertise/Discipline: Automatic dyeing systems

Visiting Scientists: Susan Marks
State/Country: England
Expertise/Discipline: Positioning quilts with the visual arts and culture

Research Associates

Agronomy and Horticulture

Research Associate: Liakat Ali
State/Country: Canada
Expertise/Discipline: Genetic and molecular basis of agronomic performance

Research Associate: Minyoung Kim
State/Country: South Korea
Expertise/Discipline: Bioaerosol transport

Research Associate: Adam Liska
State/Country: Germany
Expertise/Discipline: Research involving the Ecological Intensification Project

Research Associate: Nancy Nicolai
State/Country: Israel
Expertise/Discipline: Grassland Ecologist

Research Associate: Tri Der Setiyono
State/Country: Indonesia
Expertise/Discipline: Decision support tools for exploiting crop yield potential

Research Associate: Peter Skelton
State/Country: Nebraska
Expertise/Discipline: Farming system performance in terms of agronomic practices

Research Associate: Scott Tubbs
State/Country: Florida
Expertise/Discipline: Nitrous oxide emissions in relay cropping systems

Biochemistry

Research Associate: Nitish Agrawal
State/Country: India
Expertise/Discipline: Enzymology

Research Associate: Mathias Antoine
State/Country: France
Expertise/Discipline: Enzymology

Research Associate: Mingxia Cao
State/Country: China
Expertise/Discipline: Plant molecular biology

Research Associate: Qi Cheng
State/Country: China
Expertise/Discipline: Molecular biology

Research Associate: Mishtu Dey
State/Country: India
Expertise/Discipline: Inorganic chemistry/metallobiochemistry

Research Associate: Razvan Dumitru
State/Country: Romania
Expertise/Discipline: Biochemistry

Research Associate: Sanjay Garg
State/Country: India
Expertise/Discipline: Immunology

Research Associate: Todor Genkov
State/Country: Bulgaria
Expertise/Discipline: Plant biochemistry/molecular biology

Research Associate: Wen Zhi Jiang
State/Country: China
Expertise/Discipline: Plant molecular biology

Research Associate: Heejeong Kim
State/Country: Korea
Expertise/Discipline: Electrophysiology

Research Associate: Dung Le
State/Country: Vietnam
Expertise/Discipline: Biochemistry

Research Associate: Jiusheng Lin
State/Country: China
Expertise/Discipline: Plant molecular biology

Research Associate: Alexei Lobanov
State/Country: Russia
Expertise/Discipline: Bioinformatics

Research Associate: Yexin Ouyang
State/Country: China
Expertise/Discipline: Plant molecular biology and biochemistry

Research Associate: Dominique Padovani
State/Country: France
Expertise/Discipline: Enzymology

Research Associate: Valentina Shchedrina
State/Country: Russia
Expertise/Discipline: Selenoproteins

Research Associate: Chloe von Oostende
State/Country: France
Expertise/Discipline: Plant molecular biology and biochemistry

Research Associate: Qin Wei
State/Country: China
Expertise/Discipline: Biochemistry, cell signaling, proteasomes

Research Associate: Wenxin Xu
State/Country: China
Expertise/Discipline: Plant molecular biology

Research Associate: Yan Zhang
State/Country: China
Expertise/Discipline: Bioinformatics

Research Associate: Weidong Zhu
State/Country: China
Expertise/Discipline: Enzymology

Biological Systems Engineering

Research Associate: Tanya Gachovska
State/Country: Bulgaria
Expertise/Discipline: Electrical Engineering

Research Associate: Vikas Kumar
State/Country: India
Expertise/Discipline: Computational Fluid Dynamics (CFD)

Research Associate: Yixiang Xu
State/Country: China
Expertise/Discipline: Food Science and Technology

Entomology

Research Associate: Haichuan Wang
State/Country: Canada
Expertise/Discipline: Insect biochemistry/molecular biology

Nutrition and Health Sciences

Research Associate: Subhashinee Wijeratne
Country: Sri Lanka
Expertise/Discipline: Molecular nutrition

Plant Pathology

Research Associate: Irina Agarkova
State/Country: Uzbekistan
Expertise/Discipline: Molecular biology of plant pathogenic bacteria

Research Associate: Anna Block
State/Country: England
Expertise/Discipline: Plant hormones

Research Associate: Lisa Fitzgerald
State/Country: Nebraska
Expertise/Discipline: Chlorella viruses

Research Associate: Ming Guo
State/Country: China
Expertise/Discipline: Molecular biology of plant pathogenic bacteria

Research Associate: Kwang Hong Lee
State/Country: Korea
Expertise/Discipline: Chlorella viruses

Research Associate: Guangyong Li
State/Country: China
Expertise/Discipline: Molecular plant-microbe interactions

Research Associate: Paola Valbuzzi
State/Country: Italy
Expertise/Discipline: Chlorella viruses

School of Natural Resources

Research Associate: Naikoa Aguilar-Amastechegui
State/Country: Columbia
Expertise/Discipline: Bioeconomic modeling of fish populations

Research Associate: Ya Ding
State/Country: Nebraska
Expertise/Discipline: Natural resources economics

Research Associate: Song Feng
State/Country: China
Expertise/Discipline: Diagnostics of climate variations

Research Associate: Viviane Hénaux
State/Country: France
Expertise/Discipline: Wildlife mark-recapture

Research Associate: Jae H. Ryu
State/Country: Nebraska
Expertise/Discipline: Hydrology

Research Associate: Donna Woudenberg
State/Country: Nebraska
Expertise/Discipline: Drought management

Textiles, Clothing and Design

Research Associate: Abdus Salam
State/Country: Bangladesh
Expertise/Discipline: New dyeing and finishing technologies

Veterinary and Biomedical Sciences

Research Associate: Ofelia Chañon-Barletta
State/Country: Columbia
Expertise/Discipline: Microbiology

Research Associate: Shuanghu Liu
State/Country: China
Expertise/Discipline: Hepatology and infectious diseases

Research Associate: Christina Topliff
State/Country: Nebraska
Expertise/Discipline: Virologist

Research Associate: Kuiyi Xing
State/Country: Jiangsu Province, People's Republic of China
Expertise/Discipline: Biochemistry

Research Associate: Marat R. Sadykov
State/Country: Kazakhstan
Expertise/Discipline: Molecular biology

Research Associate: Sandra E. Perez De Bretschneider
State/Country: Argentina (Buenos Aires)
Expertise/Discipline: Molecular virology

Each faculty member with an ARD appointment has a federally-approved research project. A number of faculty have multiple projects. There are 338 research projects that were active for all or part of the 2006-2007 fiscal year in agriculture, natural resources and family, textiles, and health sciences. Projects are generally three to five years in duration. Faculty also are part of a national network of Agricultural Experiment Station scientists located at land-grant universities across the United States. ARD researchers currently are involved with about 54 Multistate research projects in which they conduct cooperative research with scientists at other universities, addressing problems of regional and national importance. They also participate in approximately 138 multistate coordinating committees, which serve to exchange information and coordinate cooperative research/extension activities among institutions.

Research projects are listed by departments. An asterisk (*) indicates that the project was terminated in fiscal year 2006-2007. Following are different types of projects and their funding source.

Type	*Funding Source*	*Type*	*Funding Source*
Hatch	Federal and State Funds	Competitive Grant	Federal Funds/USDA
Hatch Multistate	Federal Funds	Animal Health	Federal Funds
State	State Funds	Cooperative Agreement	
McIntire-Stennis	Federal Funds	Other Grant	
Special Grant	Federal, State, Public and Private		

Project Type Description:

Hatch: research on all aspects of agriculture, including soil and water conservation and use; plant and animal production, protection, and health; processing, distributing, marketing and utilization of food and agricultural products; forestry, including range products, multiple use of forest and rangelands, and urban forestry; aquaculture; family sciences, including human nutrition and family life; and rural and community development.

Multistate: research in agriculture, natural resources and family sciences with regional importance and Nebraska application. Research is a collaborative effort with scientists from other land-grant institutions and federal agencies.

State: research on all aspects of agriculture, natural resources, family sciences, and rural development that is supported entirely by state funds.

McIntire-Stennis: research relating to: 1) reforestation and management of land for the production of timber and other related products of the forest; 2) management of forest and related watershed lands to improve conditions of water flow and to protect resources against floods and erosion; 3) management of forest and related rangeland for production of forage for domestic livestock and game and improvement of food and habitat for wildlife; 4) management of forest lands for outdoor recreation; 5) protection of forest land and resources against fire, insects, diseases, or other destructive agents; 6) utilization of wood and other forest products; 7) development of sound policies for the management of forest lands and the harvesting and marketing of forest products; and 8) such other studies as may be necessary to obtain the fullest and most effective use of forest resources.

Special Grants: targeted research projects to address special needs for family sciences, agriculture, and the management of natural resources for Nebraska.

Competitive Grants: includes research in USDA national priority areas.

Animal Health: research to promote the general welfare through improved health and productivity of domestic livestock, poultry, aquatic animals, and other income-producing animals that are essential to the nation's food supply and the welfare of producers and consumers of animal products.

Cooperative Agreement: Funds from USDA agencies other than CSREES.

Agricultural/ Natural Resources Units

Agricultural Economics

10-138 Hatch
Measurement of competitiveness of U.S. beef, soybean, wheat, and corn production (L.E. Fulginiti)

10-145 Hatch
Finding motivations and mechanisms for profitable conservation (G.D. Lynne)

10-146* Hatch
Enforcement issues and efficiency in the agri-food marketing system: genetic modification, organic agriculture, and government intervention (K. Giannakas)

10-148* Multistate
NC-1003, Impact analysis and decision strategies for agricultural research (R.K. Perrin)

10-149 Hatch
Enhancing public understanding of the U.S. beef market through industrial organization research and education (A.M. Azzam)

10-150* Hatch
Economic analysis of Nebraska cropping systems (G.A. Helmers)

10-152 Hatch
Strategic behavior and optimal regulation in industrialized agricultural markets: patents, biotechnology and organic agriculture (A.Yiannaka)

10-153 Hatch
Analysis of agricultural real estate market dynamics in Nebraska (B.B. Johnson)

10-154 Multistate
NC-1016, Economic assessment of changes in trade arrangements, bioterrorism threats and renewable fuels requirements on U.S. grain and oilseed sector (D.M. Conley)

10-155 Hatch
Vertical integration, contract coordination and market power in agricultural raw product market (J. Royer)

10-156 Hatch
Economic analysis of international agricultural trade issues before the World Trade Organization (E.W. Peterson)

10-157 Multistate
W-1190, Interfacing technological, economic, and institutional principles for managing inter-sector mobilization of water. (R. Supalla, D. Martin)

10-158 Multistate
NC-1034, Impact analyses and decision strategies for agricultural research (R.K. Perrin)

Agricultural Leadership, Education and Communication

24-034 State
Predictors of leader and follower behavior and the impact of leadership development interventions and programs (J.E. Barbuto, Jr., S.M. Fritz)

24-035 State
Surveying and characterizing distance education interventions in Nebraska rural communities (J.W. King)

24-036 State
Relationship of servant leadership to other leadership theories and role in explaining follower behavior and organizational effectiveness in NE (D.W. Wheeler)

Agronomy and Horticulture

12-002 Hatch
Genetics, breeding and evaluation of winter small grains crops for Nebraska (P.S. Baenziger, B.E. Beecher)

12-194 Hatch
Novel methods for soybean genetic improvement and genomic analysis (J.E. Specht)

12-201* State
Maintenance, increase, and distribution of elite germ plasm (J. Noel)

12-209 Hatch
Procedures for assessing impacts of nonpoint agrichemicals on ground water (R.F. Spalding)

12-252 Hatch
Biosolids application and soil chemical properties: changes in phosphorus and carbon pools (D.L. McCallister)

12-255* Hatch
Soybean breeding and genetic studies (G.L. Graef)

12-260 Hatch
Resource-efficient management of summer annual dryland cereal crops in Nebraska (S.C. Mason)

12-261 State
Cropping systems to optimize yield, water and nutrient use efficiency of pearl millet and grain sorghum (S.C. Mason)

12-267 Hatch
Ecophysiology of corn - velvetleaf competition (J.L. Lindquist)

12-268 Hatch
Sustainable farms, landscapes and rural communities in Nebraska: an agricultural systems team approach (C.A. Francis)

12-274 Hatch
Physiological bases of environmental constraints on plant growth and productivity (T.J. Arkebauer)

12-275 Multistate
NC-213, Marketing and delivery of quality cereals and oilseeds (B. Beecher)

12-281* Hatch
Enhancing crop diversity by understanding genotype by environment interactions (L.A. Nelson)

12-282* Hatch
Grazingland response to seasonal grazing strategies (W.H. Schacht)

12-286* Other Grant
Application of geospatial and precision technologies (A. Dobermann, R.M. Caldwell, V.I. Adamchuk, R.B. Ferguson)

12-288 Hatch
Identification and analysis of jasmonic acid signal transduction components in plants (P.E. Staswick)

12-289 Hatch
Precise nutrient management in corn-based systems (A.R. Dobermann)

12-290 Hatch
Relationship of organic phosphorus bioavailability and PH to plant growth, phosphorus uptake, and mycorrhizal establishment (M. Mamo)

12-291 Hatch
Improved soil productivity and environmental quality on non-irrigated land in southeastern Nebraska (C.S. Wortmann)

12-293* Multistate
NC-218, Assessing nitrogen mineralization and other diagnostic criteria to refine nitrogen rates for crops and minimize losses (D.T. Walters)

12-294 Hatch
Detection and assessment of genetic variation in economically important weed species (D.J. Lee)

12-295 State
Soil and water management for improving sorghum production in eastern Africa (C.S. Wortmann, M. Mamo)

12-296 Hatch
Cultural practices to minimize environmental stress on horticultural crop production (L. Hodges)

12-297 Hatch
Improving the end-use performance characteristics of wheat and other cereal grains (S. Baenziger)

12-298 Hatch
Development of a transposon tagging system for soybean (*Glycine max* Merr) (T.E. Clemente)

12-301 Competitive Grant
Pollution and economic decision support tool for impaired watershed management plans in Eastern Nebraska (D. Ginting, G.A. Helmers, M. Mamo, C. Wortmann, B. Eghball)

12-302 Hatch
Proteomic dissection of the mitochondrial DNA metabolism apparatus in arabidopsis (S.A. Mackenzie)

12-303 Hatch
Investigating the relationship between leaf re-greening and leaf senescence in a novel model system (E.T. Paparozzi)

12-305 Competitive Grant
The genetic basis of agronomic traits controlled by chromosome 3A in wheat (S. Baenziger, K. Eskridge, I. Dweikat)

12-307 Hatch
Seasonal dynamics of annual forage crops to enhance grazing livestock systems (B. Anderson)

12-308 Hatch
Turfgrass landscape biosensing (G. Horst)

12-309 Hatch
Improving efficiency of corn breeding and developing alternative breeding methods (K. Russell)

12-310 Multistate
NC-1026, Characterize weed population dynamics for improved long-term weed management decision-making (J. Lindquist, S. Knezevic)

12-311 Hatch
Improved understanding of crop yield potential and irrigation tactics for water-limited irrigated systems (K. Cassman)

20-057* Hatch
Application of micropropagation and biotechnology to improvement and multiplication of horticultural crops (P.E. Read)

20-060 Hatch
Breeding and development of buffalograss for the central Great Plains (R.C. Shearman)

22-312 Hatch
Ecology of Nebraska grassland irrigation (J. Stubbendieck)

22-313 Competitive Grant
Contribution of Fussarium Lateritim to weed suppressive soils and weed abundance (J. Lindquist)

22-314 Hatch
Soybean breeding and genetic studies (G. Graef)

22-315 Other Grant
Effectiveness of irrigated crop management practices in reducing groundwater nitrate concentrations (R.F. Spalding)

22-316 Hatch
Increased drought resistance and yield potential in sorghum by enhancing its adaptability to cold (I. Dweikat)

22-317 Hatch
Application of micropropagation and biotechnology to improvement and multiplication of horticultural crops (P.E. Read)

22-318 Hatch
Site-specific nutrient management strategies for irrigated and non-irrigated maize (R.B. Ferguson)

22-319 Hatch
Influence of root-zone organic matter on putting green quality and performance (R. Gaussoin)

22-320 Multistate
NC1032, Characterizing active soil organic matter pools controlling soil N availability in maize-based cropping systems (D.T. Walters)

22-321 Hatch
Environmentally-appropriate management of soils for high intensity human uses (D.L. McCallister)

22-322 Other Grant
Developing small grains cultivars and systems optimally suited for organic production (P.S. Baenziger)

22-323 Hatch
Plant-animal interactions in response to grazing system on Sandhills prairie (W.H. Schacht)

22-324 Multistate
NC-506, Sustainable biorefining systems for corn in the North Central Region (K.G. Cassman)

22-325 Hatch
Nutrient and water management for grain and biofuel production systems of Nebraska (C. Wortmann)

48-029* Hatch
Resource-efficient cropping systems research for South Central Nebraska's irrigated agro-ecological zone (R.W. Elmore)

Animal Science

13-153 Hatch
Measuring and improving the quality, consistency, and uniformity of traits that influence meat value (C.R. Calkins, R.W. Mandigo)

13-154 Animal Health
Role of paracrine growth factors in bovine ovarian follicular development (A.S. Cupp)

13-156* Multistate
W-112, Reproductive performance in domestic ruminants (A.S. Cupp)

13-157 Multistate
NC-1119, Management system to improve the economic and environmental sustainability of dairy enterprises (P. Kononoff, H.D. Jose, T. Klopfenstein)

13-158 Multistate
S-1008, Genetic selection and crossbreeding to enhance reproduction and survival of dairy cattle (J.F. Keown)

13-159 Hatch
Transcriptional regulation of the porcine gonadotropin releasing hormone (GnRH) receptor gene (B.R. White)

13-161 Hatch
Genetic variation in feed energy utilization (M.K. Nielsen)

13-162 Multistate
NC-1004, Genetic and functional genomic approaches to improve production and quality of pork (R.K. Johnson, D. Pomp, J.S. Weber)

13-163 Hatch
Improving profitability and sustainability of beef feedlot production through nutrient management and corn milling co-product utilization (G.E. Erickson)

13-164 Hatch
Alternative growing-finishing beef systems (T.J. Klopfenstein)

13-166 Competitive Grant
Transcriptional regulation of the porcine GnRH receptor gene (B.R. White)

13-167 Hatch
A genetic approach to uncovering mammalian genes important in sepsis induced multiple organ failure (J.S. Weber)

13-168 Other Grant
Validating and implementing Listeria Monocytogenes controls in ready to eat meat products produced by rural meat plants in the Great Plains (D. Burson, H. Thippareddi)

13-171 Multistate
NE-1022, Poultry production systems: Optimization of production and welfare using physicological, behavioral and physical assessments (S. Scheideler)

13-172 Animal Health
Metabolic bone disease in laying hens: Etiology and genomics (S. Scheideler)

13-173 Hatch
Management systems to increase profit potential in the cow-calf enterprise using forages and grain co-products (R. Rasby)

13-174 Hatch
Impact of animal welfare guidelines for laying hen cage space allowance on laying hen in a cage system (S. Scheideler)

13-175 State
Impact of biotin supplementation on early embryonic development (B. White, J. Zempleni)

13-176 Hatch
Physiological responses of growing calves to stable fly bites (D. Brink)

13-177 Hatch
Maximizing energy capture by feeding corn ethanol co-products to dairy cattle (P. Kononoff)

13-178 Multistate
W-1171, Germ cell and embryo development and manipulation for the improvement of livestock (B. White)

26-179 Multistate
Molecular mechanisms regulating skeletal muscle growth and differentiation. (S. Jones)

26-180 Multistate
W-1112, Reproductive performance in domestic ruminants (A.S. Cupp)

44-064 Multistate
W-1177, Enhancing the competitiveness of U.S. meats (C.R. Calkins)

Biochemistry

15-098 Hatch
Genetic modification of chloroplast rubisco (R.J. Spreitzer)

15-099 State
Engineering plants for increased photosynthetic efficiency: introduction of the CO_2 concentration mechanism from C_4 plants into C_3 plants (D.P.Weeks, T. Clemente)

q5-100 Multistate
NC-1142, Regulation of photosynthetic processes (R. Chollet, J. Markwell, R.J. Spreitzer)

15-101* Hatch
Variation C metabolism in plants: biochemical and physiological characterization of cytochromes b561 (H. Asard)

15-102 Hatch
Transcriptional regulation of programmed cell death (PCD) in plant development and response to pathogens (J.M. Stone)

15-103 Hatch
Biochemistry of anaerobic CO_2 fixation and chlorophenol metabolism (S.W. Ragsdale)

15-104 Hatch
Regulation of the multifunctional proline utilization A (Put A) flavoprotein and proline metabolism in bacteria (D.F. Becker)

15-105 Hatch
Directed evolution of plant foremate dehydrogenase (J.P. Markwell)

15-106 State
Role of hyaluroran matrix in prostrate cancer progression (M.A. Simpson)

15-107 Hatch
Evolution of animal lentiviruses/HIV (J. Wood)

15-108 Hatch
Regulatory mechanisms of glutathione metabolic enzymes (J. Barycki)

15-109 Hatch
Mammalian copper transporters and systemic copper homeostasis (J. Lee)

30-110 Hatch
Inorganic carbon transporters and photosynthetic efficiency (D. Weeks)

30-111 Grant
Rubisco phylogenetic engineering (R. Spreitzer)

Biological Systems Engineering

11-001 State
Evaluation of performance of new tractors (L.L. Bashford)

11-115 Hatch
Improved anaerobic lagoon design and management for odor control (D.D. Schulte)

11-117 Hatch
Application of fuzzy systems analysis in biological systems engineering (D.D. Jones)

11-123 Hatch
Improved acquisition of thematic soil maps (V.I. Adamchuk)

11-124 Hatch
Storm runoff simulator to evaluate conservation buffers (T.G. Franti, D.P. Shelton, D.E. Eisenhauer, J.E. Gilley)

11-125 Multistate
S-1007, The science and engineering for a biobased industry and economy (D. Jones, Y. Yang, M.A. Hanna, C.L. Weller)

11-126 Hatch
Integrated research and extension education program addressing livestock air quality issues (R.M. Koelsch)

11-127 Competitive Grant
Purification process influences on structural and nutritional function of grain sorghum lipids (C. Weller, T. Carr, V. Schlegel, S. Cuppett, K. Hwang, L. Wang)

11-128 Hatch
Adaptive management of groundwater supply systems using soft computing approaches (W. Woldt)

11-129 Multistate
NE 1017, Developing and integrating components for commercial greenhouse production system (G. Meyer)

11-130 Hatch
Improved prediction and measurement of crop evapotransportation (S. Irmak)

11-131 Other Grant
A national learning center for animal agricultural water quality issues (R. Koelsch, J. Harrison, M. Risse, F. Hammerik)

11-132 Hatch
Three-dimensional volume blood flow measurements by ultrasonic feature tracking (G. Bashford)

21-133 Hatch
A machine vision system for plant species identification and mapping for precision crop management (G. Meyer)

21-134 Hatch
Improving food quality, safety, and security using spectral imaging and modeling (J. Subbiah)

21-135 Multistate
NC-1023, Improvement of thermal and alternative processes for foods (M. Hanna)

21-137 Hatch
Integrated soil sensing for site-specific crop management (V.I. Adamchuk)

21-138 Hatch
Analog prediction of expected water balance components and vegetation states based on data and a stochastic land surface model (E.I. Istanbulluoglu)

Entomology

17-062 Hatch
Arthropods associated with buffalograss and other turfgrasses in Nebraska (F.P. Baxendale)

17-071 Hatch
Development of resistance management techniques for corn insect pests in Nebraska (B.D. Siegfried)

17-078 Hatch
Plant resistance to sap-feeding insects (T.M. Heng-Moss)

17-079 Multistate
S-1010, Dynamic soybean pest management for evolving agricultural technologies and cropping systems (L.G. Higley, T.E. Hunt)

17-080 Hatch
Mechanisms and management of arthropod injury to plants (L.G. Higley)

17-081 Hatch
Conservation of insect predators of alfalfa insect pests using harvest management, vegetative landscape features, and artificial honeydew (S.D. Danielson)

17-082 Hatch
Management of subterranean termites in urban/rural environments (S.T. Kamble)

17-084 Hatch
Host-plant resistance, insect-plant interactions, and insect genetics (J.E. Foster)

28-087 Other Grant
Quantifying risk factor for evolution of European corn borer resistance to CrylF expressing corn hybrids (B. Siegfried)

28-088 Hatch
The ecology of carcass decomposition in terrestrial ecosystems (D.O. Carter)

28-090 State
Isolation and characterization of novel cellulose digesting enzymes (B.D. Siegfried)

48-028* Hatch
Spatial distribution and sampling of field crop insects (R.J. Wright)

Food Science and Technology

16-051 Hatch
Starch technology: Production, characterization, and utilization (D.S. Jackson)

16-082 Multistate
NC 213, Management of grain quality and security in world markets (D.S. Jackson)

16-083 Multistate
NC 213, Marketing and delivery of quality cereals and oilseeds (L.B. Bullerman)

16-090* Multistate
S-295, Enhancing food safety through control of foodborne disease agents (C.L. Weller)

16-095* Competitive Grant
HACCP training and research to assist meat processors with process deviations for lethality and stabilization (H. Thippareddi, D.E. Burson)

16-097 Hatch
Physical, chemical and biological control of molds and mycotoxins in foods and the environment (L.B. Bullerman)

16-098 Hatch
Near infrared spectroscopic applications for food quality measurement and process control (R.L. Wehling)

16-099* Competitive Grant
Stability and functional activity of prebiotic oligosaccharides in foods (R.W. Hutkins, R.L. Wehling)

16-100 Other Grant
Food safety: life-long learning through teacher training (R.W. Hutkins, J.H. Rupnow, G. Whipple, H. Thippareddi, L. Durso)

16-102 Hatch
Development of predictive models for the growth of foodborne pathogens in meat and poultry products (H. Thippareddi)

16-103 Hatch
Development of metabolic profiling and metabolic fingerprinting as analytical tool for educating food safety and quality (V. Schlegel, L. Wang, V.K. Juneja, C.L. Weller, C.N. Cutter, D.E. Burson)

16-104 Other Grant
HACCP assistance to small and very small processors with development and validation of safe meat chilling processes (H. Thipparreddi, L. Wang, V.K. Juneja, C. Weller, C.N. Cutter, D. Burson)

16-105 Hatch
Evaluation of natural compounds, nutraceuticals, bioavailability and antioxidant activity in the CACO-2 cell model system (S. Cuppett)

16-106 Competitive Grant
Functional consequences of genome evolution in Listeria Monocytogenes (A. Benson)

16-107 Hatch
Development of protein microarray technology for agricultural applications: implementation of lectin chip (M. Zeece)

19-003 State
Development and evaluation of food products, processes and markets (S. Taylor, D. Smith)

19-016* Special Grant
Midwest Advanced Food Manufacturing Alliance (S. Taylor)

19-019 Special Grant
Midwest Advanced Food Manufacturing Alliance (S. Taylor)

19-020 Special Grant
Midwest Advanced Food Manufacturing Alliance (S. Taylor)

31-108 Multistate
NC1131, Molecular mechanisms regulating skeletal muscle growth and differentiation (M.G. Zeece)

31-109 Special Grant
Alliance for Food Protection (S. Taylor)

31-110 Other Grant
Improving safety of shell eggs and egg products by addressing critical research needs for salmonella (H. Thippareddi)

31-111 Hatch
Applications of high pressure processing in food and biofuels (J. Subbiah)

Plant Pathology

21-070 Hatch
Mitigation of diseases of dry edible bean and stem rot of soybean by managed plant resistance (J.R. Steadman)

21-076* Hatch
Pathogenic determinants of phytopathogenic fungi (M.B. Dickman)

21-079 Hatch
Characterization of soybean diseases in Nebraska and development of plant disease management strategies in soybean and landscape plants (L.J. Giesler)

21-081 Hatch
Characterization and use of bacterial endophytes from cereals (A.K. Vidaver)

21-082* Hatch
Detection and properties of Nebraska plant viruses with emphasis on soybean viruses (L.C. Lane)

21-083 Hatch
Biological control of grass and cereal diseases in Nebraska (G.Y. Yuen)

21-085 Hatch
The fungal response to genotoxic stress (S.D. Harris)

21-088 State
The type 111 protein secretion system of *Psdeudomonas syringae* tomato DC 3000 (J.R. Alfano)

21-090 Multistate
W-1186, Genetic variability in the cyst and root-knot nematodes (T.O. Powers)

21-091 Hatch
Characterization of large algal viruses and their genes (J.L. VanEtten)

21-100* State
Evaluation of airborne remote sensing and the advanced vegetation index suite for crop disease detection: The case of dry bean rust (J.R. Steadman)

21-102 Hatch
Development of direct repeat induced gene (A. Mitra)

21-103 Multistate
W-1150, Exotic germplasm conversion and breeding common bean (phaseolus valgaris L.) for resistance to abiotic and biotic stresses and for enhanced nutritional value (J. Steadman)

35-104 Multistate
W-1147, Managing plant microbe interactions in soil to promote sustainable agriculture (G.Y. Yuen)

35-105 Hatch
Etiology, epidemiology and management of wheat diseases in Nebraska (S.N. Wegulo)

35-106 Hatch
Ecology, management, and detection of important corn diseases and mycotoxins in Nebraska (T.A. Jackson)

35-107 Competitive Grant
Functional map of tomato genome using direct repeat induced gene silencing (A. Mitra)

School of Natural Resources

27-003 Hatch
Exchange of carbon dioxide and other atmospheric trace gases in vegetated ecosystems (S.B. Verma)

27-012 Multistate
NRSP-3, The national atmospheric deposition program (NADP) (S.B. Verma)

40-002 Hatch
Remediating organic contaminants in soil and water through natural and accelerated destruction (S.D. Comfort)

40-011* McIntire-Stennis
Windbreak shelter effects (J.R. Brandle, L. Hodges, S.J. Josiah)

40-017 McIntire-Stennis
Impacts of *Pinus ponderosa* establishment on ecosystem functions in the Sandhills of Nebraska (T.N. Awada, D. Wedin)

40-018 Hatch
Agrochemicals in Nebraska groundwater: occurrence, trends, and health associations (M. Exner-Spalding)

40-019 Hatch
Evaluation and remediation of chemically compromised soil environments (P.J. Shea)

40-020 Hatch
Development of an optimal conjunctive use plan during irrigation seasons for a Nebraska river valley (Xun Chen)

40-023 Hatch
Determining time of recharge (AGE) of groundwater resources in Nebraska using water chemistry and environmental isotopes (F.E. Harvey)

40-024 State
State-wide groundwater resource assessment: focus on arsenic (D.C. Gosselin)

40-025 State
Remote sensing of the biophysical characteristics of agricultural vegetation (R.C. Rundquist and A. Gitelson)

40-026 Hatch
Landscape-level mechanisms influencing population dynamics of birds (L.A. Powell)

40-027 Hatch
Radiative transfer in vegetative canopies with emphasis on canopy structure (E.A. Walter-Shea)

40-028 Hatch
Improving the simulation of winter wheat (*Triticum aestivum L.)* responses to the environment (A. Weiss)

40-031 State
Woody species expansion in the Nebraska Sandhills: Ecological and social economic consequences (T.N. Awada, A.Yiannaka, F.E. Harvey, X. Zhou, W. Schacht, S.J. Josiah)

40-034 Hatch
Characterization of land cover for improved numerical weather prediction modeling (J. Merchant, G. Henebry)

40-035 Multistate
NC-1018, Impact of climate and soils on crop selection and management (K. Hubbard, S. Hu)

40-036 Other Grant
Drought monitoring, planning and mitigation (D. Wilhite)

40-037 Hatch
Identification of the triggering mechanisms of increased flood risk in the lower Missouri River (J. Szilagyi)

40-038 Hatch
Decision-making for wildlife under severe uncertainty (A. Tyre)

40-039 Hatch
Integrating biological diversity into managed land-use systems (R. Johnson)

40-040 Hatch
Multidecadal alternation of sources affecting interannual summer rainfall variations in the central U.S. (S. Hu)

40-041 State
Evolution, biomechanics and function in the teeth, jaws and skulls of insectivorous mammals (P. Freeman)

40-042 State
Delineation of the physical framework and tectonic features controlling the occurrences of natural resources and natural hazards (M. Carlson)

40-043 State
Nebraska landslides (D. Eversoll)

40-044 McIntire-Stennis
Trees, shrubs, grasses and the Nebraska Sandhills: Experimental ecohydrology and below ground ecology (D. Wedin)

40-045* Hatch
Groundwater resource sustainability in SE and South Central Nebraska: Focus on hydrogeology of the Little Blue River Basin (S. Summerside)

38-046 State
Environmental stewardship of cattle wastes: Do growth promoting steroids alter toxicity? (D. Snow, A. Kolok, G. Erickson)

38-047 State
Determination of appropriate lake water quality expectation in agriculturally-dominated ecosystems (J. Holz)

38-048 Other Grant
Targeting watershed vulnerability and behaviors leading to adoption of conservation management practices (P. Shea)

38-049 Multistate
W-1082, Evaluating the physical and biological availability of pesticides and pharmaceuticals in agricultural context (P. Shea)

38-050 McIntire-Stennis
Shelterbelts: Structure and function (J.R. Brandle)

38-051 Hatch
Population dynamics of Paddlefish in the Lower Missouri River Sub-Basin (M.A. Pegg)

38-052 State
Physiological effects of drought stress-responsive transgenes in soybean (T.A. Awada)

38-053 Hatch
Documentation of bedrock weathering in temperate mid-latitude Nebraska, with emphasis on acid weathering (R. Matt Joeckel)

38-054 Hatch
Drought management: Mitigation planning and policy options (D. Wilhite)

Statistics

23-001 State
Applications of statistics to research in agriculture (D.B. Marx, W.W. Stroup, A.M. Parkhurst, K.M. Eskridge)

23-003* Multistate
W-173, Stress factors of farm animals and their effects on performance (A.M. Parkhurst)

23-004 Multistate
W-1173, Stress factors of farm animals and their effect on performance (A.M. Parkhurst)

Veterinary and Biomedical Sciences

14-039 State
VBMS research laboratories and animal care facility (J.A. Schmitz)

14-059 State
Veterinary diagnostic lab system: diagnostic surveillance and disease investigation in Nebraska livestock and poultry (J.A. Schmitz, A.R. Doster)

14-115 Multistate
NC-229, Porcine reproductive and respiratory syndrome (PRRRS) (F.A. Osorio, A. Pattnaik, R. Johnson, J. Weber)

14-118 Animal Health
Pathobiology of porcine colonic spirochetosis caused by *Brachyspira pilosicoli* (G.E. Duhamel)

14-121* Multistate
NC-107, Evolving pathogens, targeted sequences, and strategies for control of bovine respiratory disease (S. Srikumaran)

14-123 Other Grant
Develop pre-harvest version of the USDA-FSIS fast antibiotic screening test and antibiotic residue avoidance education (D.D. Griffin)

14-125 Multistate
NC-1007, Enteric diseases of swine and cattle: prevention, control and food safety (R.A. Moxley, G.E. Duhamel, D.R. Smith)

14-126 Animal Health
Pathogenesis of bovine viral diarrhea virus and bovine respiratory syncytial virus infections (C.L. Kelling)

14-127 Competitive Grant
Intervention strategies to reduce *Escherichia coli* 0157:H7 in beef feedyards (D.R. Smith, G.E. Erickson, R.A. Moxley, T.J. Klopfenstein, S. Hinkley)

14-128* Competitive Grant
Regulation of the latency-reactivation cycle by the bovine herpesvirus (BHV-1) latency related gene (C.J. Jones, A.R. Doster)

14-129 Competitive Grant
Molecular analysis of a mycobacterium paratuberculosis colony-morphology attenuated mutant (R.G. Barletta)

14-130 Animal Health
Regulation of the latency reactivation cycle by the bovine herpesvirus 1 (BHV-1 latency related (LR) gene (C.J. Jones)

14-131 State
Veterinary field disease research program (D.R. Smith)

14-132 Hatch
Examination of attenuation and virulence determinants of porcine reproductive and respiratory syndrome virus (A. Pattnaik, F. Osorio)

14-133 Competitive Grant
Analyses of virulence and attentuation determinants of procine reproductive and respiratory syndrome virus using reverse genetics approach (A. Pattnaik, F. Osorio)

14-134 **Competitive Grant**
Influence of exteroxins on virulence and colonization of the porcine intestine by *Escherichia coli* (R. Moxley)

14-136 **Hatch**
Tricarboxylic acid cycle mediated regulation of staphylococcus aureus virulence factors (G. Somerville)

14-137 **State**
Genetic basis of resistance to food-borne bacterial pathogen (G. Duhamel, J. Weber)

14-138 **Competitive Grant**
Functional analysis of bICPO, the major transcriptional regulatory gene of bovine herpesvirus (C.J. Jones)

14-139 **Competitive Grant**
Use of an eGFP-expressing strain of FRRSU for the study of viral pathogenesis and tropins (F. Osorio, A. Pattnaik)

14-140 **Special Grant**
Stimulating the development of veterinarians to service rural America (D. Griffin)

14-141 **Animal Health**
Molecular genetic analysis of mycobacterium avium subsp. paratuberculosis (MAP) and related mycobacterial pathogens (R. Barletta)

39-142 **State**
Development of broad-spectrum antibiotics against bacterial pathogens (R. Barletta)

39-143 **Competitive Grant**
Functional analysis of proteins encoded by the bovine herpesvirus/latency related gene (C. Jones)

39-144 **Hatch**
Management model for diagnosis, control, and monitoring for bovine viral diarrhea virus in beef cattle herds (G.P. Rupp)

39-145 **Multistate**
NC1027, An integrated approach to control of bovine respiratory diseases (C.J. Jones)

Education and Human Sciences

Child, Youth and Family Studies

92-038 **Hatch**
Great marriages: a qualitative study (J.D. DeFrain)

92-039 **Hatch**
Risk and resiliency for substance abuse and behavioral health among immigrant adolescents in Nebraska (Y. Xia)

92-040 **Hatch**
Redefining working poor: factors associated with the concurrence of work and unmet basic needs (C.A. Huddleston)

92-041 **Multistate**
NC-1011, Rural low income families: tracking their well-being function in an era of welfare reform (K. Prochaska-Cue, S.L. Churchill)

92-042 **Hatch**
Individual, familial and community factors impacting the psycho-social well-being of rural immigrant Latinos and their non-Hispanic peers (R.L. Dalla)

92-043 **Hatch**
Parent engagement and child learning birth to five (C.P. Edwards)

92-058 **State**
Attitudinal and behavior factors related to adolescent sexual abstinence (D.A. Abbott)

27-059 **Hatch**
The social convoys of Latino adolescents in Nebraska: Understanding paths to positive outcomes (M.R. de Guzman)

27-060 **Hatch**
Strength and resiliency in rural and underserved families (R.J. Bischoff)

27-061 **Hatch**
Longitudinal evaluation of Latino family development (C.S. Hollist)

Nutrition and Health Sciences

91-045* **Multistate**
NC-219, Using stages of change model to promote consumption of grains, vegetables and fruits by young adults (L. Boeckner)

91-052* **Competitive Grant**
Using the stages of change model to increase fruit and vegetable intake (J. Ruud)

91-053* **Hatch**
The essential role of biotin in cell proliferation (J. Zempleni)

91-056 **Multistate**
W-1002, Nutrient bioavailability - phytonutrients and beyond (J.A. Driskell)

91-057 **Hatch**
Regulatory mechanisms of intestinal cholesterol absorption (T.P. Carr)

91-058 **Multistate**
NC-1167, –3 polyunsaturated fatty acids and human health and diseases (N.M. Lewis)

91-059 **Hatch**
Dietary quality and BM1 and the influence of the parent-child relationship and ethnicity of young children on these variables (K.L. Stanek-Krogstrand)

91-061 **Hatch**
The use of inulin as a functional food ingredient (M. Schnepf)

36-062 **Competitive Grant**
Biotin affects cytokine metabolism (J. Zempleni)

36-063 **Hatch**
Mechanisms of biotin homeostasis (J. Zempleni)

36-064 **Hatch**
Folate bioavailability of legumes (J.A. Albrecht)

36-065 **Hatch**
Identification and characterization of bioactive compounds with cholesterol-lowering and anti-inflammatory properties from a blue-green alga Nostoc commune (J.Y. Lee)

36-066 **Multistate**
An integrated approach to prevention of obesity in high risk families (K.L. Stanek-Krogstrand)

36-067 **Multistate**
NC-1039, –3 polyunsaturated fatty acids and human health and disease (N. Lewis)

36-068 **Competitive Grant**
Regulation of cholesterol absorption by plant sterol and stanol esters (T.P. Carr)

Textiles, Clothing and Design

94-028* **Hatch**
Process and property investigations of fibers synthesized from Nebraska's agricultural products and by-products (Y. Yang)

94-029* **Multistate**
S-1002, New technologies for the utilization of textile materials (P. Crews)

94-030* **Multistate**
S-1002, New technologies for the utilization of textile materials (Y. Yang)

94-031 **Hatch**
Housing issues in Nebraska communities: Older population needs (S. Niemeyer)

37-032 **Grant**
Building research collaborations to enhance rural economic development (N. Miller)

37-033 **Multistate**
S-1026, Textile materials and technologies addressing energy, health and other national security issues (Y. Yang)

37-034 **Hatch**
American Quilts, 1770-1940 (P.C. Crews)

37-035 **Hatch**
Process and property investigations of fibers from Nebraska's agricultural products and by-products (Y. Yang)

Off-Campus Research Centers

Northeast Research and Extension Center

42-007 **Hatch**
Management considerations for feedlot cattle exposed to environmental stressors (T.L. Mader)

42-024 Hatch
Environmentally sound utilization of animal manures and fertilizers in cropping systems for northeast Nebraska (C.A. Shapiro)

42-025 Hatch
Integrated weed management (IWM) for eastern Nebraska (S.Z. Knezevic)

42-026* Hatch
Developing economic thresholds for insect pests of conventional and value-added crops in northeast Nebraska (T.E. Hunt)

42-027* Hatch
Developing operational criteria for application of swine lagoon water via center pivot (W.L. Kranz)

42-029 Hatch
Conservation buffer designs, establishment, growth, and performance (D.P. Shelton)

42-030* Hatch
Management causes of variation in the wean-to-finish growth process of pigs (M. Brumm)

42-031 Grant
Improving organic farming systems across Nebraska agroecoregions (C. Shapiro)

41-032 Multistate
NC-205, Ecology and management of European Corn Borer and other lipidoteran pest of corn (T.E. Hunt)

41-033 Hatch
Irrigation management for improved water and chemical utilization (T.E. Hunt)

41-034 Hatch
Ecology and management of insect pests of crops in the western range of U.S. corn and soybean production (T.E. Hunt)

Panhandle Research and Extension Center

44-004 State
Fertilizer and manure application for production of continuous corn (G.W. Hergert)

44-016 Hatch
Weed control systems for western Nebraska irrigated crops and rangeland (R.G. Wilson)

44-042 Hatch
Agricultural enhancement of potato production and utilization (A.D. Pavlista)

44-052* Hatch
The economics of alternative beef cattle marketing and feeding strategies (D.M. Feuz)

44-055 Hatch
Intensification of winter wheat based dryland cropping systems for western Nebraska (D.J. Lyon)

44-058 Hatch
Integrated management systems for arthropod pests in wheat and other crops in western Nebraska (G.L. Hein)

44-062 Hatch
Improvement of proso millet and other crops for adaptation to western Nebraska (G.W. Hergert)

44-063 Hatch
Irrigation management with limited water supplies (C.D. Yonts)

44-064 Multistate
W-1177, Enhancing the competitiveness of U.S. Meats (D.M. Feuz, C.R. Calkins)

44-065 Multistate
NC-007, Conservation, management, enhancement and utilization of plant genetic resources (G.W. Hergert, K.P. Vogel)

44-067 Hatch
Planting and harvesting systems for sugarbeets, dry edible beans and chicory (J. Smith, M. Kocher)

44-068 Hatch
Improving fertilizer management and recommendations for precision agriculture (G. Hergert)

44-069 Hatch
Ecology, restoration, and management of semi-arid prairies in the Northern Great Plains (P. Reece)

44-070 Grant
Predicting wheat curl mite movement and wheat streak mosaic virus spread (G.L. Hein)

43-101 Hatch
The ecology, etiology, and management of crop diseases important to western Nebraska (R.M. Harveson)

43-102 Multistate
Promoting healthful eating to prevent excessive weight gain in young adults (L.S. Boeckner)

43-103 Hatch
Genetic improvement of dry edible beans (C.A. Urrea)

Roman L. Hruska U.S. Meat Animal Research Center

46-001 State
Development and operation of the U.S. Meat Animal Research Center (M. Koohmaraie)

West Central Research and Extension Center

43-066 Hatch
Selection, development and propagation of native herbaceous landscape plants (D.T. Lindgren)

43-070* Multistate
S-1005, Sources, dispersal and management of stable flies on grazing cattle and dairy cattle (J.B. Campbell)

43-071 Hatch
Improving irrigation management to conserve water resources in west central Nebraska (J.O. Payero)

43-072 Hatch
Soil nutrient and manure management for crop production in west central Nebraska (D.D. Tarkalson)

43-073 Hatch
Enhancing reproductive efficiency in beef cattle (R.N. Funston)

43-074 Hatch
Nutritional management systems for grazing beef cattle (D.C. Adams)

43-076 Hatch
Grazing management strategies and forage systems for western Nebraska (J.D. Volesky)

42-100 Multistate
NC-1006, Methods to increase reproductive efficiency in cattle (R. Funston)

42-101 Multistate
SDC322, Flies impacting livestock, poultry and food safety (J.B. Campbell)

42-102 Hatch
The economics of alternative beef cattle production systems using strategic specific simulation modeling (M.C. Stockton)

42-103 Competitive Grant
Whole-farm economic, biological, stochastic, simulation model of small to medium cow-calf firms with research, teaching and extension modules (M.C. Stockton)

Interdisciplinary Activities

Administration

32-009* Other Grant
Soil science and forest health management research-natural resources facility (D. Vanderholm)

Agricultural Research and Development Center

45-001 State
Field laboratory development (D.J. Duncan)

12-201 State
Maintenance, increase and distribution of elite germ plasm (J. Noel)

Center for Biotechnology

34-001 Hatch
Mechanisms of plant cell signaling (M.E. Fromm)

Center for Grassland Studies

33-001 State
Center for Grassland Studies (M.A. Massengale)

33-003 Multistate
NC-1020, Beef cattle grazing systems that improve production and profitability while minimizing risk and environmental impacts (T. Klopfenstein)

33-004 Multistate
NC-1021, Nitrogen cycling, loading and use efficiency in forage-based livestock (W. Schacht, T. Klopfenstein)

Industrial Agricultural Products Center

Plant Science Initiative

35-002 Competitive Grant
Training graduate students in plant breeding using crop drought tolerance improvement as a model (S. Mackenzie)

62-003 Competitive Grant
Dissecting the function of HrpJ and HrpK1 - two type III secreted proteins that are required for the injection of effectors into plant cells (J.R. Alfano)

Sustainable Agriculture Research and Education (SARE) Program

32-010 Special Grant
FY02 NCR SARE Plan of Work (W. Wilcke)

32-011 Special Grant
North Central Region Sustainable Agriculture Research and Education Program (W. Wilcke)

32-012 Special Grant
North Central Region Sustainable Agriculture Research and Education Program (W. Wilcke)

32-013 Cooperative Agreement
North Central Sustainable Agriculture Research and Education Program (W. Wilcke)

Nebraska Rural Initiative

03-101 Competitive Grant
Relocation to the Buffalo Commons using a marketing approach (R. Cantrell)

While serving the needs of Nebraska's agricultural producers, agribusinesses, industries, communities and citizens, the ARD places a high priority on being accountable for its resources and documenting impacts of its programs. As in all research institutions, ARD scientists are charged to actively disseminate results of research in scientific journals and technical publications. The division sets optimistic, but reachable, annual goals for scientific publication, theses and dissertations, and other measures of research output.

Publications in refereed (peer reviewed) scientific journals represent professional acknowledgment of the value of a research finding to the discipline. ARD scientists have published in a number of different scientific journals during 2006-2007. Faculty also have written books, edited books or contributed chapters for books.

Another major contribution of the ARD research faculty is the education of graduate students pursuing a Master of Science (M.S.) or Doctor of Philosophy (Ph.D.) degree. One responsibility of a graduate degree is the completion of a thesis (M.S.) or a dissertation (Ph.D.).

Publications in refereed journals, books, book chapters, refereed proceedings, theses and dissertations are listed for calendar year 2006.

Journals in which faculty have published during 2006

Agricultural Economics

AgBioForum
American Journal of Agricultural Economics
Crop Science
Environment and Behavior
Great Plains Research
International Journal of Industrial Organization
Journal of Agricultural and Food Industrial Organization
Journal of Animal Science
Journal of Applied Meteorology and Climatology
Journal of Socio-Economics
Nebraska Law Review
Water Resources Research

Agricultural Leadership, Education and Communication

Academic Exchange Quarterly
Group and Organizational Management
Journal of Leadership and Organizational Studies
Journal of Sustainable Agriculture
Nutritional Reviews
Perceptual and Motor Skills
Psychological Reports
The Journal of Social Psychology

Agronomy and Horticulture

Agricultural Ecosystem Environment
Agricultural and Forest Meteorology
Agricultural Water Management
Agronomy Journal
Agronomia Mesoamericana
Annals of Applied Biology
Applied Engineering in Agriculture
Applied Turfgrass Science
Biochemistry and Molecular Biology Education
Cereal Chemistry
Cereal Research Communications
Communications in Soil Science and Plant Analysis
Crop Management
Crop Science
Ethiopia Agronomy Journal
Forage and Grazinglands
Genetics
Genomics
Great Plains Research
HortScience
Journal of ASTM International
Journal of Chemical Physics
Journal of Contaminant Hydrology
Journal of Environmental Quality
Journal of Geophysical Research
Journal of Molecular Evolution
Journal of Natural Resources and Life Sciences Education
Journal of Rural and Community Development
Journal of Sustainable Agriculture
Mexican Society of Soil Science
Molecular Biology Education
National Academy of Sciences

Natural Areas Journal
Planta
Plant Cell Reports
Plant and Soil
Soil Biology and Biochemistry
Soil and Tillage Research
Soil Science
Soil Science Society of America Journal
Weed Science
Weed Technology

Animal Science

Applied Engineering in Agriculture
Archives of Animal Nutrition
Australian Farm Institute Farm Policy Journal
Biochimica Et Biophysica
Biology of Reproduction
Genetical Research
Journal of Agricultural and Food Chemistry
Journal of Animal Science
Journal of Clinical Endocrinology and Metabolism
Journal of Dairy Science
Journal of Extension
Journal of Kansas Entomological Society
Journal of Muscle Foods
Livestock Science
Meat Science
Molecular Energy
Nutrition and Natural Resources
Physiological Genomics
Poultry Science
Professional Animal Scientist
The Federation of American Societies of Experimental Biology Journal Express
The Professional Animal Scientist
Veterinary Immunology and Immunopathology

Biochemistry

American Chemical Society Chemical Biology
American Journal of Pathology
Applied and Environmental Microbiology
Archives of Biochemistry and Biophysics
Biochemistry
Biochemistry Journal
Biochemistry and Molecular Biology Education
Bioessays
Bioresource Technology
Chemical Review
Experimental Eye Research
Federation of American Societies for Experimental Biology Journal
Genome Biology
Journal of the American Chemical Society
Journal of Biological Chemistry
Journal of Inorganic Biochemistry
Journal of Molecular Biology
Molecular Biology
National Academy of Sciences
Natural Products Report
Neuromuscular Disorders
Nucleic Acids Research
Philosophical Transactions of the Royal Society
Progress in Nucleic Acid Research and Molecular Biology
Public Library of Science Biology
Recent Patents on Anti-Infective Drug Discovery
Sociobiology
The Plant Journal

Biological Systems Engineering

Advanced Polymer Technology
Agriculture Water Management
American Association of Textile Chemists and Colorists Review
American Journal of Rhinology
Applied Engineering in Agriculture
Applied Ergonomics
Bioresource Technology
Cereal Chemistry
Computers and Electronics in Agriculture-Elsevier
Farm Policy Journal, Australian Farm Institute
Food Science and Biotechnology
Geological Society of America Bulletin
Industrial Crops and Products
Industrial Engineering and Chemistry Research
International Journal of Pharmaceuticals
Irrigation Science
Journal of Agricultural and Food Chemistry
Journal of Applied Polymer Science
Journal of Extension
Journal of Food Science
Journal of Geophysical Research
Journal of Hydrology
Journal of Imaging Science and Technology
Journal of Soil and Water Conservation
Journal of Sugar Beet Research
Lebensmittal-Wissenschaft und Technologie
Plant and Soil
Polymer
Renewable Energy
Revista Engenharia Agricola
Terra Lafinoamericana
Transactions on Medical Imaging
Transactions of the American Society of Agricultural Engineers
Trends in Food Science and Technology
Water Resources Research

Wiley InterScience
World Journal of Gastroenterology

Entomology

Acta Zoologica Cracoviensia
American Biology Teacher
American Entomologist
Applied Engineering in Agriculture
Behavorial Ecology and Sociobiology
Crop Protection
Crop Science
Environmental Contamination Toxicology
Environmental Entomology
Euphytica
Fisheries Management and Ecology
Insect Biochemistry and Molecular Biology
Journal of Agronomy
Journal of Economic Entomology
Journal of Insect Behavior
Journal of Insect Science
Journal of Kansas Entomological Society
HortScience
Insectes Sociaux
Medical and Veterinary Entomology
Naturwissenschaften
Physiological Entomology
Plant Cell and Environment
Sociobiology
Soil Biology and Biochemistry
Virology
Weed Science

Food Science and Technology

Advances in Polymer Technology
Applied Engineering in Agriculture
Applied Microbiology and Biotechnology
Bioresource Technology Elsevier
Cereal Chemistry
Chemists Society
Food and Chemical Toxicology
Food Science and Biotechnology
Food Science and Food Safety
Immunology
Industrial Crops and Products
Industrial Engineering and Chemistry Research
International Journal of Pharmaceuticals
Journal of Agricultural and Food Chemistry
Journal of Analytical and Applied Pyrolysis
Journal of Applied Engineering
Journal of Applied Polymer Science
Journal of Animal Science
Journal of Bacteriology
Journal of Food Microbiology
Journal of Food Protection
Journal of Food Process Engineering
Journal of Food Science
Journal of Nutrition
Lebensmittel-Wissenschaft und Technologie
Molecular Nutrition Food Research
National Academy of Sciences
Proteins and Proteomics
Renewable Energy
Revista Brasiteirea de Armazenamento
Rurals
Soy Connection
Transactions of the American Society of Agricultural Engineers
Trends in Food Science and Technology

Plant Pathology

Aspergillus nidulians
Biological Control
Crop Science
Eukaryotic Cell
Genetics
Journal of Bacteriology
Journal of General Virology
Journal of Membrane Biology
Journal of Nematology
Journal of Proteome Research
Journal of Virology
Molecular Microbiology
Molecular Plant-Microbe Interaction
Mycrological Research
National Academy of Sciences
Phtyopathology
Plant Disease
Plant Health Progress
Protein Expression and Purification
Revista Mexicana de Filtopatologia
Virology
Virus Research

School of Natural Resources

Aquaculture
Agriculture and Forest Meteorology
Agriculture Systems
American Midlands Naturalist
Applied Optics
Aquatic Ecology
Biological Invasions

Canadian Journal of Zoology
Chemosphere
Comparative Biochemistry and Physiology
Condor
Contamination and Toxicology
Ecological Modeling
Ecology of Freshwater Fishes
Ecology Letters
Ecology and Society
Ecosystems
Environmental Science and Technology
Geomorphology
Geophysical Research
GIScience and Remote Sensing
Global and Planetary Change
Great Plains Research
HortScience
Information Sciences
International Journal of Plant Science
Journal of Agricultural Science
Journal of Agronomy
Journal of Animal Science
Journal of Applied Meteorology and Climatology
Journal of Atmospheric and Oceanic Technology
Journal of Contaminant Hydrology
Journal of Entomological Science
Journal of Environmental Engineering
Journal of Freshwater Ecology
Journal of Hydrologic Engineering
Journal of Hydrology
Journal of Irrigation and Drainage Engineering
Journal of the North American Benthological Society
Journal of Paleogeography, Paleoclimataology and Paleoecology
Journal of Parasitology
Journal of Physical Chemistry
Journal of Remote Sensing
Journal of Social Psychology
Journal of Wildlife Diseases
Journal of Wildlife Management
Journal of Zoology
National Academy of Sciences
Organic Geochemistry
Practice Periodical of Hazardous, Toxic, and Radioactive Waste Management
Photogrammetric Engineering and Remote Sensing
River Research and Applications
Soil and Sediment Contamination
Texas Journal of Science
The American Naturalist
The Southwestern Naturalist
Transactions of the American Fisheries Society
Water Resources Research
Western Interior Basin
Wildlife Society Bulletin

Statistics

American Dietetic Association
Biometrical Journal
Crop Science
Journal of Animal Science
Journal of Dental Research
Journal of Entomological Science
Journal of Heredity
Poultry Science
Psychological Assessment
Psychological Genomics
Soil and Sediment Contamination
Soil Science
Soil Science Society of America Journal
Weed Technology

Veterinary and Biomedical Sciences

American Journal of Veterinary Research
American Society of Microbiology
Animal Reproduction Science
Applied and Environmental Microbiology
Biochemistry Biophysiology Acta
Biology Journal
Clinical Vaccine Immunology
Current Eye Research
Experimental Eye Research
Infection and Immunity
Infectious Immunology
Journal of Clinical Microbiology
Journal of NeuroVirology
Journal of Veterinary Diagnostic Investigation
Journal of General Virology
Journal of Molecular and Cellular Cardiology
Journal of Virology
Molecular Vision
Physiology Genomics
Preventative Veterinary Medicine
The Professional Animal Scientist
The Veterinary Journal
Vaccine
Veterinaria Mexico
Veterinary Immunology and Immunopathology
Veterinary Microbiology
Veterinary Record
Veterinary Therapeutics
Virology

Education and Human Sciences Departments

Child, Youth and Family Studies

Child Development
Early Childhood Research Quarterly
Family Relations
Journal of Hispanic Higher Education
Jiangsu Social Science
Journal of Applied Developmental Psychology
Journal of Family and Consumer Sciences Education
Journal of the National Extension Association of Family and Consumer Sciences
Parenting Science and Practice
Psychology of Women Quarterly
Sexual Addiction and Compulsivity

Nutrition and Health Sciences

Advances in Food and Nutrition Research
Food Protection Trends
International Journal for Vitamin and Nutrition Research
Journal of Extension
Journal of the American Dietetic Association
Journal of Nutrition
Journal of Nutrition Biochemistry
Nutrition Research
Western Journal of Nursing Research

Textiles, Clothing and Design

American Association of Textile Chemists and Colorists Review
Indian Journal of Fiber and Textile Research
Journal of Agricultural and Food Chemistry
Journal of Family and Consumer Sciences
Journal of Fashion Marketing and Management
Journal of Housing for the Elderly
Journal of Imagine Science and Technology
Journal of Research in Marketing and Entrepreneurship
Journal of Small Business Strategy
Polymer

Water Center

Bulletin of Environmental Contamination and Toxicology
Great Plains Research

Off-Campus Research Centers

Northeast Research and Extension Center

Agricultural Water Management
Agronomy Journal
American Journal
Applied Engineering in Agriculture
Journal of Animal Science
Terra Latinoamericans
Weed Science
Weed Technology

Panhandle Research and Extension Center

American Entomologist
Agronomy Journal
Annual Report of the Dry Bean Improvement Cooperative
Cereal Chemistry
Communications in Soil Science and Plant Analysis
Crop Science
Euphytica
Fungicide and Neamticide
Journal of the American Dietetic Association
Journal of Animal Science
Journal of Sugarbeet Reserach
Plant and Soil
Plant Disease
Plant Health Progress
Soil Science
Terra Latinoamericans
Virology
Weed Technology
Western Journal of Nursing Research

West Central Research and Extension Center

Agricultural Water Management
Agronomy Journal
American Entomologist
Applied Engineering in Agriculture
Forage and Grazinglands
Journal of Animal Science
Journal of Natural Resource and Life Science Education
Plant and Soil
Soil Science

Research Publications (2006)

Agricultural/ Natural Resources Units

Agricultural Economics

Journal Articles

Aiken, J. David. 2006.
Hydrologically-connected ground water, section 858 and the spear T decision. Nebraska Law Review 843:962-996.

Artikov, I., G.D. Lynne, L.M. PytlikZillig, Q. Hu, A.J. Tomkins, K.G. Hubbard, M.J. Hayes, and W.J. Waltman. 2006.
Understanding the influence of climate forecasts on farmer decisions as planned behavior. Journal of Applied Meteorology and Climatology 45:1202-1214.

Giannakas K. and A. Yiannaka. 2006.
Agricultural biotechnology and organic agriculture: National organic standards and labeling of GM products. AgBioForum 92:84-93.

Hu, Q., L.M. PytlikZillig, G.D. Lynne, K.G. Hubbard, W.J. Waltman, M.J. Hayes, A.J. Tomkins, and D.A. Wilhite. 2006.
Improving farmers' forecast use from understanding their beliefs, social norms, and perceived obstacles. Journal of Applied Meteorology and Climatology 45:1190-1201.

Kalinowski, C.M., G.D. Lynne, and B. Johnson. 2006.
Recycling as a reflection of balanced self-interest: A test of the metaeconomics approach. Environment and Behavior 38:333-355.

Lynne, G.D. 2006.
Toward a dual motive metaeconomic theory. Journal of Socio-Economics 35:634-651.

Nelson, R., B.B. Johnson, and D. Darling. 2006.
Underlying causes and implications of Nebraska retail trade patterns. Great Plains Research 16:1.

Schmer, M.R., K.P. Vogel, R.B. Mitchell, L.E. Moser, K.M. Eskridge, and R.K. Perrin. 2006.
Establishment and thresholds for switchgrass grown as a bioenergy crop. Crop Science 461:157-161.

Schoengold, K., D.L. Sunding, and G. Moreno. 2006.
Price elasticity reconsidered: Panel estimation of an agricultural water demand function. Water Resources Research 42, W09411, doi:10.1029/2005WR004096.

Schroeter, J., A. Azzam, and J.D. Aiken. 2006.
Anti-corporate farming laws and industry structure: The case of cattle feeding. American Journal of Agricultural Economics 88:1000-1014.

Sitz, B.M., C.R. Calkins, D.M. Feuz, W.J. Umberger, and K.M. Eskridge. 2006.
Consumer sensory acceptance and value of wet-aged and dry-aged beef steaks. Journal of Animal Science 84:1221-1226.

Veyssiere, L. and K. Giannakas. 2006.
Strategic labeling and trade of GMOs. Journal of Agricultural and Food Industrial Organization 41:1-38.

Yiannaka A. and M. Fulton. 2006.
Strategic patent breadth and entry deterrence with drastic product innovations. International Journal of Industrial Organization 24:177-202.

Book Chapter

Lynne, G.D. 2006.
On the Economics of Subselves: Toward a Metaeconomics, p. 99-122. *In:* Morris Altman (ed.), Handbook of Contemporary Behavioral Economics, M.E. Sharpe Inc., New York, NY.

Refereed Proceedings

Conley, D. and C. Kerr. 2006.
Economic assessment of selected disaster events on corn markets in the U.S. and Argentina. *In:* Academic Symposium of the International Food and Agribusiness Management Association (IFAMA), Buenos Aires, Argentina. URL: http://www.ifama.org/conferences/2006 Conference/default.htm

Raymond, A. and R. Supalla. 2006.
Analyzing the economics of groundwater allocation: An example using the Lower Loup NRD. *In:* Proceedings of 51st Annual Midwest Groundwater Conference, Lincoln, NE.

Rui, H., L.E. Fulginiti, and E.W. Peterson. 2006.
Investing in hope: Aids, life expectancy, and human capital accumulation. Chapter 2. *In:* The State of the World's Children 2006: Excluded and Invisible,UNICEF annual report. URL: http://www.unicef.org/publications/files/SOWC_2006_English_Report_rev(1).pdf

Shea, P.J., M. Milner, G.D. Lynne, A.R. Martin, and M.E. Burbach. 2006.
Targeting watershed vulnerability and behaviors leading to adoption of conservation management practices, p. 23 *In:* M.E. Burbach, R.M. Joeckel, and C.A. Flowerday (eds.), 51st Midwest Ground Water Conference, Program with Abstracts. University of Nebraska–Lincoln, School of Natural Resources, Lincoln, NE.

M.S. Theses

Alok, A. 2006.
Participation in the food stamp program in Nebraska. (R.K. Perrin and L.E. Fulginiti, Advisors)

Coelho, A.R. 2006.
Empirical determinants of fed cattle livestock risk protection insurance basis. (A.A. Azzam and D.R. Mark, Advisors)

Drivas, K. 2006.
The effect of cooperatives on innovation. (K. Giannakas, Advisor)

Khachaturyan, M. 2006.
The market acceptance and welfare impacts of genetic use restriction technologies (gurts). (A. Yiannaka, Advisor)

Kibonge, A. 2006.
An empirical model of migration with an application to Nebraska. (A.A. Azzam, Advisor)

Ph.D. Dissertation

Bouras, B. 2006.
Two essays on multiproduct food oligopolies. (A.A. Azzam, Advisor)

Agricultural Leadership, Education and Communication

Journal Articles

Barbuto, J.E., Jr., L. Barbuto, P. de la Rey, A.B. Boshoff, and X. Ye. 2006.
Examining the antecedents of sales performance in the post-apartheid era: A field study. Psychological Reports 99:603-618.

Barbuto, J.E., Jr. 2006.
Mental energy: Assessing the motivation dimension. Nutrition Reviews 647:14-16.

Barbuto, J.E., Jr. and J.A. Moss. 2006.
Dispositional effects in intra-organizational influence tactics: A meta-analytic review. Journal of Leadership and Organizational Studies 123:30-52.

Barbuto, J.E., Jr. and D.W. Wheeler. 2006.
Scale development and construct clarification of servant leadership. Group and Organization Management 313:300-326.

Barbuto, J.E., Jr. and M.J. Bugenhagen. 2006.
Preliminary relationship between follower's locus of control and organizational citizenship behaviors. Psychological Reports 98:882-884.

Barbuto, J.E., Jr. and X. Ye. 2006.
Source of motivation, interpersonal conflict management styles, and leadership effectiveness: A structural model. Psychological Reports 98:3-20.

Barbuto, J.E., Jr. 2006.
Four classification schemes of motivation: Current thinking and measures. Perceptual and Motor Skills 102:563-575.

Barbuto, J.E., Jr. and J. Moss. 2006.
The relationship between agents' motivation and their use of consultative, legitimating, and pressure influence tactics: Some meta-analytic results. Psychological Reports 99:121-124.

Barbuto, J.E., Jr. and M.E. Burbach. 2006.
The emotional intelligence of transformational leaders: A field study of elected officials. The Journal of Social Psychology 1461:51-64.

Li. L., J.W. King, and M. Kutscher. 2006. Multimedia integration in online courses. Academic Exchange Quarterly 94: 214-219.

Trout, S., C. Francis, and J. Barbuto. 2006. Evaluation and perceived impacts of the North-Central Region SARE grants, 1988-2002. Journal of Sustainable Agriculture 272: 117-137.

Book Chapter

Trout, S.K., C. Francis, and J.E. Barbuto Jr. 2006. Motivation theory and motivation research in sustainable agriculture, p. 289-306. *In:* C. Francis, R. Poincelot, and R. Bird (eds.), A New Social Contract: Developing and Extending Sustainable Agriculture. Haworth Press, Binghamton, NY.

Refereed Proceedings

Reimers-Hild, C.I. and J.W. King. 2006. The entrepreneurial learner, persistence and motivation in the distance environment. *In:* Conference Proceedings of the 2006 Distance Learning Administration Conference, Jekyll Island, GA.

Waller, S.S., S.M. Fritz, D.E. Husmann, D.E. Reese, R.R. Stowell, and L.A. Powell.2006. The prospective student's image of agriculture. *In:* North Central Region - Academic Programs Section of Student Recruitment & Retention, West Lafayette, IN.

Ph.D. Dissertations

Boren, A.E. 2006. An exploration of the cultural adaptation processes of immigrants and local residents in rural communities. (S.M. Fritz, Advisor)

Bugenhagen, M.J. 2006. Antecedents of transactional, transformational, and servant leadership: A constructive-development theory approach. (J.E. Barbuto, Jr., Advisor)

Moss, J.A. 2006. Testing the relationship between interpersonal political skills, altruism, leadership success and effectiveness: A multilevel model. (J.E. Barbuto, Jr., Advisor)

Agronomy and Horticulture

Journal Articles

Abdelnoor, R.V., A.C. Christensen, S. Mohammed, B. Munoz-Castillo, H. Moriyama, and S.A. Mackenzie. 2006. Mitochondrial genome dynamics in plants and animals: Convergent gene fusions of a *MutS* homolog. Journal of Molecular Evolution 63:165-73.

Abendroth, J.A., A.R. Martin, and F.W. Roeth. 2006. Plant response to combinations of mesotrione and photosystem II inhibitors. Weed Technology, 20:267-274.

Adviento-Borbe, M.A.A., J.W. Doran, R.A. Drijber, and A. Dobermann. 2006. Soil electrical conductivity and water content affect N_2O and CO_2 emissions in intensively managed soils. Journal of Environmental Quality 35:1999-2010.

Amos, B. and D.T. Walters. 2006. Maize root biomass and net rhizodeposited carbon: An analysis of the literature. Soil Science Society of America Journal 705:1489-1503.

Anderson, B.E. and J.D. Volesky. 2006. Nebraska 2002 - 2004 mead cool-season grass variety trial results. Forage and Grazinglands. Available at: *http://www.plantmanagementnetwork.org/fg/trials/*

Anderson, B.E. and J.D. Volesky. 2006. Nebraska 2003 - 2004 mead orchardgrass variety trial results. Forage and Grazinglands. Available at: *http://www.plantmanagementnetwork.org/fg/trials/*

Baenziger, P.S., W.K. Russell, G.L. Graef, and B.T. Campbell. 2006. Improving lives: 50 years of crop breeding, genetics and cytology (C-1). Crop Science 46: 2230-2244.

Baenziger, P.S., B. Beecher, R.A. Graybosch, D.D. Baltensperger, L.A. Nelson, Y. Jin, J.E. Watkins, J.H. Hatchett, M. Chen, and G. Bai. 2006. Registration of 'Hallam' wheat. Crop Science 46:977-979.

Baenziger, P.S., B. Beecher, R.A. Graybosch, D.D. Baltensperger, L.A. Nelson, J. M. Krall, Y. Jin, J.E. Watkins, D.J. Lyon, A.R. Martin, M. Chen, and G. Bai. 2006. Registration of 'Infinity CL' wheat. Crop Science 46:975-977.

Baenziger, P.S. 2006. Plant breeding training in the U.S. HortScience 41:40-44.

Barker, D.C., S.Z. Knezevic, A.R. Martin, D.T. Walters, and J.L. Lindquist. 2006. Effect of nitrogen addition on the comparative productivity of corn and velvetleaf (*Abutilon theophrasti*). Weed Science 54:354-363.

Bernards, M.L., J.T. Simmons, C.J. Guza, C.R. Schulz, D. Penner, and J.J. Kells. 2006. Inbred corn response to acetamide herbicides as affected by safeners and microencapsulation. Weed Technology 20:458-465.

Bernards, M.L., D. Penner, and J. Michael. 2006. Water conditioner adjuvant and fertilizer formulation effect on micronutrient-glyphosate tank-mixtures. Journal of ASTM International 3:5. Available at *www.astm.org*

Biswas, B., D.C. Ghosh, M.K. Dasgupta, N. Trivedi, J. Timsina, and A. Dobermann. 2006. Integrated assessment of cropping systems in the Eastern Indo-Gangetic Plain. Field Crops Research 99:35-47.

Bonifas, K.D. and J.L. Lindquist. 2006. Predicting biomass partitioning to root versus shoot in corn and velvetleaf (*Abutilon theophrasti*). Weed Science 54:133-137.

Bradley, K., R.A. Drijber, and J. Knops. 2006. Increased N availability in grassland soils modifies their microbial communities and decreases the abundance of arbuscular mycorrhizal fungi. Soil Biology and Biochemistry 38:1583-1595.

Brhane, G., C.S. Wortmann, M. Mamo, H. Gebrekidan, and A. Belay. 2006. Micro-basin tillage for grain sorghum production in semi-arid areas of northern Ethiopia. Agronomy Journal 98:124-128.

Brooks, D.W. and J. Markwell. 2006. A mechanistic foundation for instructor-regulated collective learning. Biochemistry and Molecular Biology Education 342:103-110.

Burton, M.G., D.A. Mortensen, and J.L. Lindquist. 2006. Effect of cultivation and within-field differences in soil conditions on feral *Helianthus annuus* growth in ridge-tillage maize. Soil and Tillage Research 88:8-15.

Castaneda Chavez, J.W., S.C. Mason, Q. Argueta Portillo, R. Ventura Ellias, M. Hernandez Valle, and R. Clara Valencia. 2006. Eficiencia del uso de nitrogeno en las variedades de sorgo sensibles al fotoperiodo. Agronomia Mesoamericana 172:19-25.

Dalley, C.D., M.L. Bernards, and J.J. Kells. 2006. Effect of weed removal timing and row spacing on soil moisture in corn *(Zea mays)*. Weed Technology 20:399-409.

Dilbirligi, M., M. Erayman, B.T. Campbell, H.S. Randhawa, P.S. Baenziger, I. Dweikat, and K.S. Gill. 2006. High-density mapping and comparative analysis of agronomically important traits on wheat chromosome 3A. Genomics 88:74-87.

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Eckert, H., B. LaVallee, B.J. Schweiger, A.J. Kinney, E.B. Cahoon, and T. Clemente. 2006. Co-expression of the borage desaturase and the Arabidopsis 15 desaturase results in high accumulation of stearidonic acid in the seeds of transgenic soybean. Planta 224:1050-1057.

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Felter, D.G., D.J. Lyon, and D.C. Nielsen. 2006. Evaluating crops for a flexible summer fallow cropping system. Agronomy Journal 98:1510-1517.

Gillebo, T. and C.A. Francis. 2006. Stakeholder cooperation in sustainable development: Three case studies in Norway. Journal of Rural and Community Development 21:28-43.

Ginting, D. and M. Mamo. 2006. Measurements of runoff suspended solids using improved turbidometer method. Journal of Environmental Quality 35:815-823.

Gitelson, A.A., A. Vina, S.B. Verma, D.C. Rundquist, T.J. Arkebauer, G. Keydan, B. Leavitt, V. Ciganda, G.G. Burba, and A.E. Suyker. 2006. Relationship between gross primary production and chlorophyll content in crops: Implications for the synoptic monitoring of vegetation productivity. Journal of Geophysical Research 111:D08S11, doi:10.1029/2005JD006017.

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Grigera, M.S., R.A. Drijber, K.M. Eskridge, and B.J. Wienhold. 2006. Soil microbial biomass response to physicochemical properties that define apparent electrical conductivity. Soil Science Society of America Journal 70:1480-1488.

Gulsen, O., R.C. Shearman, T.M. Heng-Moss, N. Mutlu, D.J. Lee, and G. Sarath. 2006. Peroxidase gene polymorphism in buffalograss and other grasses. Crop Science 472:767-774.

Gustafson, T.C., S.Z. Knezevic, T.E. Hunt, and J.L. Lindquist. 2006. Simulated insect defoliation and duration of weed interference affected soybean growth. Weed Science 54:735-742.

Gustafson, T.C., S.Z. Knezevic, T.E. Hunt, and J.L. Lindquist. 2006. Early season insect defoliation influences the critical time for weed removal in soybean. Weed Science 54:509:515.

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Panhandle Research and Extension Center

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ARD receives funding from federal formula funds, industry grants, federal grants and state appropriations. During fiscal year 2006-2007, ARD expended external grant, contract and research support funds that totaled $45,761,211. The extramural funds coming to ARD faculty to address problems of importance to Nebraska have a significant direct impact on the state's economy.

Report of Research Expenditures The University of Nebraska Agricultural Research Division

For the Period July 1, 2006 through June 30, 2007

		Dollar Amounts
State Appropriated Funds:		$33,666,547
Grants and Contracts:		
Federal Formula Funds:		
Hatch Formula	$ 2,288,257	
Multi-State Hatch Research	$ 848,860	
McIntire-Stennis	$ 226,080	
Animal Health	$ 189,080	
Total Federal Formula Funds	$ 3,552,277	
Nebraska Research Initiative Funds	$ 3,149,011	
Other Federal Grants and Contracts:		
USDA Cooperative Agreements	$ 1,532,854	
USDA Special and Competitive Grants	$ 5,249,543	
NSF, NIH, USEPA, AID, DOE	$ 8,524,279	
Total Other Federal Grants and Contracts:		$15,306,676
Non-federal Grants, Contracts, and Gifts*		$11,121,751
Total Grants and Contracts		$33,129,715
Research Expenditures from Product Sales		$12,631,496
Total Expenditures		$79,427,758

*Includes State and Local agencies, other Institutions, Industry and Foundations.

Agricultural Research Division
Research Investments by Category and Funding Source FY 2007

Expenditure Category	*State Appropriated*	*Federal Grants*	*Industry Grants*	*Revolving Funds*	*Total*
Salaries, Wages and Benefits					
Administrative/Faculty	41.9%	11.5%	8.2%	2.9%	24.0%
Managerial/Professional	13.3%	6.1%	9.7%	7.4%	10.2%
Office/Service	9.7%	3.6%	7.8%	15.8%	9.1%
Hourly Wages	0.3%	1.7%	3.2%	2.9%	1.5%
GRA Stipends	5.4%	12.5%	12.9%	2.1%	7.5%
Benefits	16.1%	8.4%	9.6%	8.3%	12.2%
Subtotal:	86.6%	43.8%	51.5%	39.5%	64.95%
Operating					
Supplies and Expenses	10.1%	50.0%	40.0%	43.9%	28.6%
Travel	1.0%	2.6%	5.7%	3.3%	2.4%
Equipment	2.3%	2.9%	2.9%	13.3%	4.4%
Subtotal:	13.4%	48.5%	48.5%	60.5%	35.5%
Total:	100.0%	100.0%	100.0%	100.0%	100.0%

Agricultural Research Division
Selected Research Program Information

Category	FY 2005	FY 2006	FY 2007
Project Information:			
Projects at beginning of year	330	371	338
Projects terminating	41	54	91
Projects revised	3	4	3
New projects	20	21	30
Projects at the end of the year	309	338	296
Faculty full-time equivalents (FTE)	131.9	145.2	156.6
Expenditures for budgeted research faculty:			
Federal formula and state approp., $/FTE	$301,956	$274,380	$247,137
Grant and contracts, $/FTE	$217,849	$187,238	$175,488
Product sales, $/FTE	$ 86,447	$ 89,059	$ 83,874
Outputs from research programs[1]:			
Refereed journal articles	401	490	616
Research bulletins	5	2	7
Books and book chapters	88	62	69
M.S. and Ph.D. theses	145	125	100
Cultivars and germplasm released	30	8	4
Patents obtained	1	0	2

[1]A large number of abstracts, technical reports, and other non-refereed articles also are published by faculty each year.