

Fall 2015

Growing

A HEALTHY FUTURE



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FOOD • FUEL • WATER • LANDSCAPES • PEOPLE

INSTITUTE OF AGRICULTURE AND NATURAL RESOURCES | UNIVERSITY OF NEBRASKA-LINCOLN





Much to Celebrate



Ronnie D. Green

Five years. It seems like just yesterday I was interviewing for the Vice Chancellor position in the Institute of Agriculture and Natural Resources at the University of Nebraska-Lincoln.

I was wide-eyed, brimming with enthusiasm, and had big goals for what we could accomplish together.

Today, I find myself in awe and appreciation of the fact we have accomplished entirely more than I could have ever imagined. If someone would have told me five years ago where we would be today, I would have politely told them they were living a dream. Turns out, I am.

We have much to celebrate in IANR. Enrollment in the College of Agricultural Sciences and Natural Resources has increased 11 years in a row and has reached a record high for five straight years. Enrollment at the Nebraska College of Technical Agriculture in Curtis is also on an upward trajectory, rising to 512 students this year, a 33 percent increase.

IANR has also made phenomenal strategic investments in talent, growing our tenure-track faculty ranks by 27 percent by 2016, attracting faculty in interdisciplinary areas that are key to Nebraska's future success, including science literacy; stress biology of plants, animals and agroecosystems; healthy humans; healthy systems for agricultural production and natural resources; computational sciences; and drivers of economic vitality. These new faculty will contribute toward UNL's goal to grow research expenditures to \$300 million; already IANR's annual research expenditures exceed \$125 million, leading the UNL campus.

Nebraska Extension is more relevant today, than it has ever been, as we work to translate our research to producers and consumers. Our increased presence at the Nebraska State Fair, through the Raising Nebraska building and exhibits, is a very special feather in our cap.

We are also leading the population and development of Nebraska Innovation Campus. This edition is almost entirely devoted to our involvement in NIC, and I hope you will enjoy reading about all we have accomplished.

Perhaps the biggest change has been the number of new and renovated buildings we have dedicated in the past five years. There are too many to list, but I do hope you will stop by campus and at our various research sites across the state, and tour our beautiful new and expanded facilities. We are always growing to better serve you, and we are especially excited that construction has begun on the new Veterinary Diagnostic Center and the East Campus student residence hall complex.

IANR is home to faculty, staff, and students who are passionate about making a difference for Nebraska and the world. Our goals for the future are bold and on target - and we're in the right place, at the right time, with the right people on board, to achieve them.

It's easy to be just as enthusiastic today, as I was five years ago when I began this whirlwind journey. I could not be more excited about where the University of Nebraska-Lincoln and all our partners in agriculture, natural resources, and human sciences are headed to meet the challenges ahead.

Ronnie D. Green, Ph.D.
*Vice President Agriculture and Natural Resources
University of Nebraska
Harlan Vice Chancellor, Institute of Agriculture
and Natural Resources
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GROWING A HEALTHY FUTURE

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Historically, if you ask a child what they want to be when they grow up, common responses include teacher, firefighter or athlete.

However, in today's world there's another profession that's becoming increasingly appealing to youth and adults. Food scientist.

"The food industry is impacting the world three times a day," said Rolando Flores, head of the UNL Department of Food Science and Technology and director of The Food Processing Center. "People are seeing more opportunities to become involved in a field in which they can have an impact."

The Department of Food Science and Technology has seen unprecedented growth over the past eight years, doubling its numbers of undergraduate and graduate students. In addition, there are now 26 faculty members in the department. With this growth comes a need for newer and larger facilities, which is where Nebraska Innovation Campus comes in.

In July, the Department of Food Science and Technology and The Food Processing Center moved their operations to the Food Innovation Center at Nebraska Innovation Campus. The 178,000-square-foot complex provides world-class facilities for the department and private partners leased in the space. It includes a state-of-the-art distance education classroom, wet/dry lab research space, food grade/non-food grade pilot plant space and office space.

It was the largest move in IANR history and took nearly two years to coordinate. Contingency planning was critical, as temperature-controlled samples from the department's 27 labs needed to be maintained. The physical move was successfully completed in 10 days and on schedule.

"The food industry is impacting the world three times a day."

UNL Department of Food Science and Technology growing in more ways than one



Now that the department and FPC have settled into the space, the opportunities for collaboration are endless with private companies developing food products alongside a team of UNL product developers and students working in the labs. The integration of learning between the department and the FPC is unique in a university setting and one that UNL sees as a priority.

“A few of the companies who are operating here at Nebraska Innovation Campus are doing so because of The Food Processing Center,” said Flores. “Our students are working in the labs, helping The Food Processing Center product developers and getting a very similar experience to what they would get out of an internship.”

Due to the hands-on and impactful experiences that students are getting in the department and by working in the FPC, several have started their own businesses. Julianne Kopf worked in the FPC for three years and graduated in May with a degree in food science and technology. During her time at the FPC she researched and developed a

variety of cricket-based food products. Kopf cofounded Bugeater Foods in January with two fellow UNL graduates. The company produces and distributes protein shake powder with crickets serving as a primary ingredient.

“Although not playing with, or eating insects has been embedded in our culture since childhood, most insects are high protein and iron sources,” said Kopf. “Crickets in general have good sources of iron, protein, omega three fatty acids and riboflavin.”

Research such as Kopf’s is critical to providing food for a rapidly growing population. The worldwide population is expected to hit 9 billion people by 2050, and food scientists are working diligently to sustain the availability of food. The department is an internationally known leader in the research areas of food allergens, food safety, preservation and transformation, gastrointestinal biology, and dietary bioactive agents and functional foods. With increased funding, research in these areas has been increasing. A grant from the Nebraska Research Initiative

and a donation from ConAgra Foods, Inc. and Wenger made additional equipment possible in the new department and FPC pilot plants. This new equipment has enhanced the training of students, service to the industry and research capabilities in high-pressure processing, extrusion and freezing of foods.

“Our goal is to continue a solid progression until we become the food capital of the world when it comes to research,” Flores said. “Basic and applied research, along with outstanding teaching and consolidated outreach is the core that impacts the world three times a day.”

With an increasing amount of students, faculty and research, the Department of Food Science and Technology and The Food Processing Center are eager to welcome aspiring food scientists to their new home at Nebraska Innovation Campus.

by: Haley Steinkuhler



The Food Innovation Center has three new classrooms. Two have space for 50 students. The other classroom, which accommodates 120 students, is a multimedia classroom. Students have individual microphones on the desktop so everyone can hear when they ask or answer questions and state-of-the-video equipment enables an instructor to teach students in the room and online simultaneously.

The audiovisual capabilities of this auditorium allow for an overflow into the other two classrooms, thus 220 people can participate in the same lecture, making these the most modern teaching classrooms at UNL.

“Our students are working in the labs, helping The Food Processing Center product developers and getting a very similar experience to what they would get out of an internship.”



FOOD PROCESSING CENTER SERVES ALL SECTORS OF THE FOOD INDUSTRY

The Food Processing Center, which was established 32 years ago, is nationally known for helping individual entrepreneurs and small companies launch a food product from the initial idea to a finished product on grocery store shelves.

That work will continue and the Center's move to the Food Innovation Center on Nebraska Innovation Campus will enable the Center to do more for the food industry, a growing industry fundamental to Nebraska, said Jayne Stratton, research associate professor in the Department of Food Science and Technology. The Center, which collaborates with the Department of Food Science and Technology, includes pilot plants, laboratory services, a team of product developers and a team that supports food entrepreneurship.

"The Center's skills and technical knowledge have progressed beyond providing basic support services. Now we're doing bigger projects in applied research," Stratton said. "We want to grow. We want to try to focus more on industry partnerships." In addition to equipment that was moved from East Campus, new and more sophisticated equipment provides more in-depth, dependable and scientifically sound services to all sectors of the food industry from micro-entrepreneurs to larger companies statewide, nationwide and worldwide.

The Food Processing Center fills the gaps between basic research, which is scientific discovery such as how something works or what it does in the body, and applied research, which is applying the discovery to actual food products. This could include food preservation, maintaining product stability, value added to traditional products or by-products or a new application of something already known.

"The Center's skills and technical knowledge have progressed beyond providing basic support services."

"We also are increasing our applied research capabilities with the addition of two new research assistant professors in the Center, Doctors Zhang and Xu, food science specialists," Stratton said.

The move to Nebraska Innovation Campus also will enable the Center to provide more workshops, short courses and online certificate programs for both academia and the food industry.

"The overall goal is to create a facility for the future that combines innovative research and education to enhance the food industry's production of nutritious and safe food to help feed a quickly growing world population," Stratton said.

by: **Linda Ulrich**

Kaitlin Reimer, an undergraduate student, spoons out chocolate chip cookies made with sorghum. The cookies were later served at the Nebraska Sorghum Board booth at the Nebraska State Fair.

When Food Dreams Made Real, which does business

as Suji's Korean Cuisine, was announced in April as the first international company to occupy space at Nebraska Innovation Campus, founder Suji Park was asked why she chose Nebraska.

"It's the best," answered Park. "It's the Silicon Valley of red meat."

For the past 10 years, Park has headed up four international businesses that provide cross-cultural flavors: authentic New-York-style deli and brunch via a restaurant group in Seoul and Tokyo; Korean and U.S. flavors to retail consumers in Japan; U.S. and Japanese flavors to retail customers in Korea. Now, the successful Korean businesswoman is bringing her all-natural and authentic Korean recipes to the United States.

recommended that Park contact the FPC.

"Suji was interested in improving food processing techniques of current products in Asia and to introduce Korean product lines in the U.S.," said Rupnow.

The UNL Food Processing Center team helped Park develop basic Korean recipes she thinks will appeal to an American palate and get the products market-ready.

"The role of the FPC is to connect people with ideas with the market," said Rolando Flores, director of the FPC and head of the Department of Food Science and Technology. "This is a very unique success story because we have someone from overseas settling here in Nebraska because the FPC is located here."

Established in 1983, the FPC is a major food processing and applied research hub that

INTERNATIONAL COMPANY FINDS NEW HOME IN THE SILICON VALLEY OF RED MEAT

Along with Nebraska's appeal as "The Beef State," another factor that encouraged Park's move to Nebraska was the UNL Food Processing Center. When Park attended the Institute of Food Technologists' annual meeting in 2012, she took a course taught by UNL professor John Rupnow titled, "Food Science for the Non-food Scientist." During their initial meeting, Rupnow

integrates applied research with state-of-the-art pilot plants, laboratory services, and a team of product developers who support food entrepreneurship and create value-added in Nebraska.

Laurie Keeler, senior manager for product development at the FPC, was instrumental in helping improve the quality and safety of Park's products.



"I see Nebraska Innovation Campus as the future of the state, and I'm excited to be involved."

by: Haley Steinkuhler

"Assisting Suji with getting her bulgogi sauce into the market is a great example of how the FPC can contribute to the food industry," said Keeler. "Any growth or added value to the food industry is good for an agriculturally driven state."

Once the relationship was established, Park and the FPC went to work. Park approached large food retail and American club store chains to gauge interest in her products, working with the FPC and each store chain to adapt recipes to customers' taste preferences. Then she outsourced the product manufacturing to a Nebraska-based food processor for certain products. Future products may be outsourced to food processors in neighboring states, as well. One major company in Nebraska currently provides all of the state-of-the-art packaging to ensure that products remain fresh longer.

Park expects to have her products in 2,000 U.S. stores by the end of 2015.

In addition to the FPC, many other Nebraska entities collaborated on helping Park establish a market in the U.S. The Nebraska Department of Economic Development awarded Food Dreams Made Real and Suji's Korean Cuisine with Value-added Agriculture Academic Phase I and II grants of \$100,000 and \$200,000, respectively. Invest Nebraska, a private nonprofit corporation focused on high-growth companies in Nebraska and growing the state's economy, awarded FDMR \$150,000 in Commercialization Program funding to launch its initial Suji's Korean BBQ™ product line of precooked beef and pork bulgogi.

Park's enthusiasm for her own special formulated Korean-themed all natural products, and eagerness to engage Nebraska business expertise, has helped her establish strong partnerships with Universal Pasteurization, Needham Meats, Omaha Steaks and Packaging Corporation of America, among other Nebraska-based companies.

"Nebraska is such a business-friendly environment," said Park. "With the resources of a new facility, support of the academic community and agricultural influences, I see Nebraska Innovation Campus as the future of the state, and I'm excited to be involved."

Thanks to FPC, Suji Park is able to share her Korean products with the world.



PILOT PLANTS HELP TAKE NEW FOOD FROM IDEA TO FINISHED PRODUCT

If you're trying a new recipe, you probably won't triple it until you know whether your family will thumb their noses at it. The same concept —

though on a much larger scale — holds true for a commercial food manufacturer with an idea for a new product. In addition to making sure consumers like the sensory characteristics of the product, commercial manufacturers also need to see what potential problems might need to be addressed before going to full production.

The Pilot Plants in The Food Processing Center can help develop a wide variety of new foods ranging from Mom's homemade gooseberry and rhubarb jelly to frozen dairy products to a commercial food manufacturer's kale chips. The Pilot Plants house equipment that can be used to produce samples and test product formulas or food ingredients on a small scale, relative to production, which can help save money and time in bringing finished products to the marketplace.

With the move to the greatly expanded square footage at Nebraska Innovation Campus, the number of Pilot Plants has increased from three to eight. It's an exciting expansion for Steve Weier, general manager of the Pilot Plants, and George Cavender, research assistant professor in The Food Processing Center and the Department of Food Science and Technology.

The Food Processing Center has long been known for its general

food processing capability and specifically for its work in extrusion, Weier said. Extrusion processing is used extensively throughout the food and feed industry for the production of ready-to-eat cereals, snacks, pasta, pet foods and feeds. This work will continue but with new equipment and expanded capabilities, including the ability to create a wider range of product samples, Weier said.

Extrusion processing is a continuous cooking system that allows control of the size, shape, texture, density, uniformity and other key properties needed to ensure a desirable final product. Extrusion processing also provides opportunities to formulate foods to include enhanced levels of nutraceuticals, vitamins or minerals to improve consumer health.

In addition to extrusion, The Food Processing Center facility at NIC has added more high pressure processing (HPP) equipment to complement an existing small scale (2-liter capacity), research-sized machine. The addition of a 55-liter capacity pilot scale HPP and a continuous HPP for processing liquids will dramatically increase the capabilities available for basic and applied research and process validation, as well as new product development, Cavender said.

"Our new facility has very close to state-of-the-art equipment for high pressure processing, an area that has been somewhat neglected in the food industry," Cavender said.

"We are one of only a few universities in the country with this kind of equipment, and perhaps the only one with this kind of range of HPP capabilities," he said. "The potential is so great. It's an exciting time."

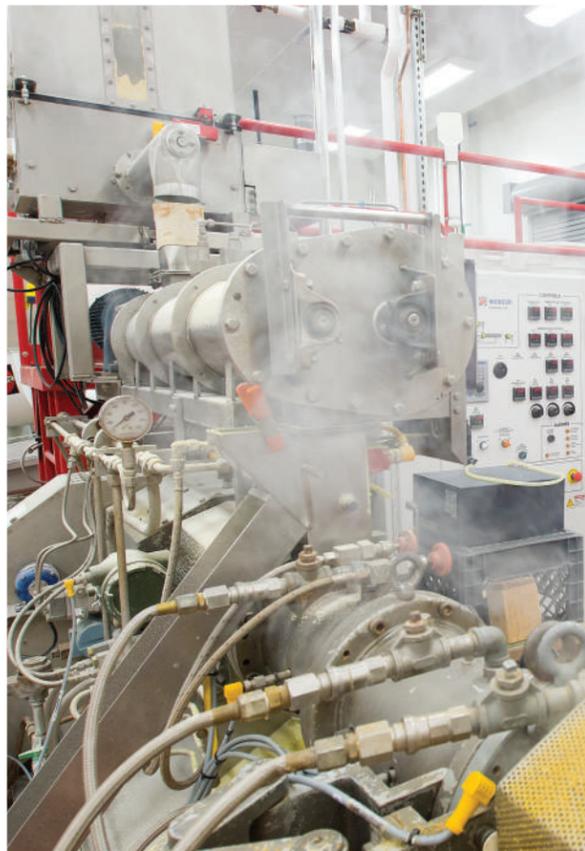
High pressure processing is considered a non-thermal process that uses extreme pressure (greater than 40,000 pounds per square inch) to reduce pathogens and extend the shelf life of packaged food products. Compared with thermal (heated) processing, high pressure processed foods can have a fresher taste and improved appearance, texture and nutrition. It works particularly well on processing sensitive products such as guacamole, ready-to-eat lunch meats, juices, dressings and seafood.

The Food Processing Center also has a larger space for bench scale (small scale) product development and the food sensory lab, which allows clients to conduct taste tests on food products being developed.

Weier and John Rupnow and Curtis Weller, professors in the Department of Food Science and Technology, toured several other highly regarded university food science facilities around the country as they developed plans for the new Pilot Plants. The group talked with several representatives at each location to assess what was done well and what they should have changed.

"We used the information gathered from these trips to help guide the design of the Food Innovation Complex. The result is something really special," Weier said. "In addition to the outstanding Food Processing Center facilities, the Food Innovation Complex houses wonderful laboratory and classroom spaces that will benefit the research being done here and the quality of the future graduates of this program."

by Linda Ulrich



“We’re discovering new phenotypes, and measuring phenotypes to a higher sensitivity than ever before.”

New facility takes plant research to new levels

Drought tolerance. It’s an issue at the top of the minds of agricultural producers across the globe. In order to meet the demand of feeding 2.5 billion more people that will be living on planet Earth by 2050, our crops will need to withstand periods of drought. How can our crops become more drought tolerant, salt tolerant and disease tolerant? These are the questions that University of Nebraska–Lincoln researchers will be answering in the new automated plant phenotyping facility at Nebraska Innovation Campus.

The phenotyping facility provides technology for studying plant characteristics, or phenotypes, at high throughput and with high resolution. A series of conveyor tracks is used to move plants on a computerized schedule from greenhouse bays through a controlled environment chamber where multiple cameras can capture images in the visible, infrared, fluorescence and hyperspectral range of each plant.

The system is capable of measuring mature plants from model species to larger crop species, including corn. Electronic scales and robotic stations can weigh, water and apply nutrients to the plants. The conveyor system will be expanded later this year to support over 600 pots by early 2016.

Funding for the facility was made possible through the Nebraska Research Initiative, which is an investment by the State of Nebraska to provide a research base within the University of Nebraska to enhance economic growth in a variety of areas, including agriculture. The \$2 million automated system is one of only a handful in the world.

“The research we’re able to conduct in this new facility is cutting-edge,” said Harkamal Walia, plant molecular physiologist in the Department of Agronomy and Horticulture. “We’re discovering new phenotypes, and measuring phenotypes to a higher sensitivity than ever before.”

The goal is to discover genes and genetic variants that can be used to improve crop performance in unfavorable growing conditions, whether it’s in Nebraska or on the other side of the globe. While the discoveries that are a result of the phenotyping facility could have worldwide impacts, there also is potential to help farmers down

the road. The structure within IANR provides the opportunity to link research information with Nebraska Extension offices across the state. Innovations from the phenotyping facility can be made available to help make the in-field research at extension centers more effective. Findings could also make their way into publications made available to the public.

“This is about recognizing some of the greatest needs for farmers and producers in the state of Nebraska around drought and disease tolerance, which really reflects the needs of farmers around



the world,” said Archie Clutter, dean of UNL’s Agricultural Research Division.

The expertise Walia and other UNL researchers are developing in processing the phenotype findings has sparked the interest of private sector partners. Research of this nature could have value for seed companies and others in the industry, which is why several are looking at collaboration through the phenotyping facility.

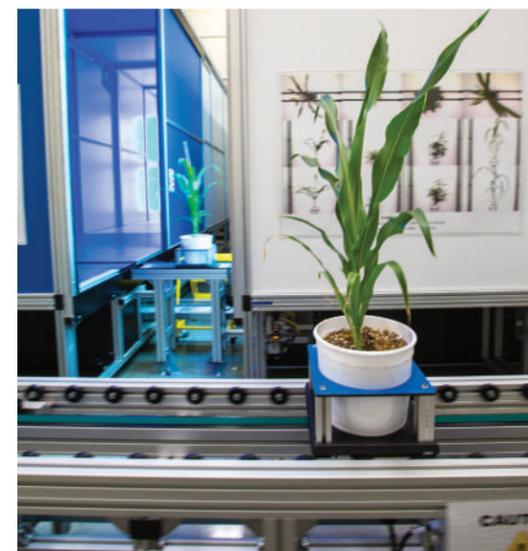
“We have extensive experience in processing and interpreting the images captured by the technology,” said Walia. “Leveraging the facility and our expertise could give these companies unique research opportunities.”

The facility is located in the new Greenhouse Innovation Center at Nebraska Innovation Campus. The center features 45,000 square feet of greenhouse and headhouse space. The greenhouses are heated and cooled with sustainable energy. The center features state-of-the-art computer environmental controls and 22 foot eave heights to allow for optimal air circulation. When fully completed, the Greenhouse Innovation Center will include 60,000 square feet of greenhouse space connected to 80,000 square feet of office and wet lab space.

by: Haley Steinkuhler

SEEKING SALT-TOLERANT RICE GENES IN GREENHOUSE INNOVATION CENTER

Harkamal Walia
UNL plant molecular physiologist



Rice is one of the most important crops for global food security. But climate change, erratic precipitation patterns and the resulting rise in sea levels are creating an increasingly saline environment for rice production in many lowlying coastal regions of the world, resulting in decreasing yields estimated to cost the rice industry more than \$12 billion annually.

Soil salinity is important because rice is the most salt-sensitive cereal. Most rice is irrigated. After rice plants take in water or it evaporates, salt builds up in the soil over time and hinders plant growth and productivity. With a \$2 million grant from the National Science Foundation, Harkamal Walia, plant molecular physiologist in the Department of Agronomy and Horticulture, is using new tools in the Greenhouse Innovation Center to research salt-tolerant genes in rice.

“The extent of genetic variation for salt tolerance in rice is largely unknown and underutilized,” he said.

In the new facility on Nebraska Innovation Campus, Walia and his team use a sophisticated image-based phenotyping system that takes high-resolution images of the rice plants as they endure simulated drought and high salinity conditions. Software processes the images, detecting daily differences among the varieties that are not visible to the human eye. Matching slight visual variations with differences in each plant’s genetic makeup will help the team find the genes responsible for salt tolerance.

“This system will accelerate one aspect of my research dramatically,” said Walia, who uses a similar system in Australia for his research.

Why study rice in a state where it isn’t grown? Walia’s research focuses on both local and global food production challenges, and his rice research relates to other crops grown by Nebraska farmers.

“Rice is the most important cereal crop in the world. It provides 60 to 65 percent of the calories for people in the lower economic strata who live on less \$1 a day,” he said, **“but it also is a very nice model that can provide biological applications to wheat, barley and corn.”**

Rice and other cereals such as wheat have many similar traits so discoveries made in rice can be valuable in improving traits such as drought tolerance in wheat and other crops, Walia said.

“As food needs increase dramatically in the next few decades, we will need an integrated approach in agriculture to adapt to extreme environments,” he said. “Genetic improvement of crops for tolerance to increased drought events and salinity stress are an important component of the integrated approach toward global food security.”

by: Linda Ulrich

It's an ear tag for cattle with a high tech twist.

Using mobile technology, Quantified Ag is developing an electronic ear tag that continuously monitors the health of cattle remotely, said Vishal Singh, cofounder, president and CEO of Quantified Ag in Lincoln, Neb.

The Quantified Ag team also includes Andrew Uden, cofounder and chief operations officer, and Brian Schubbach, chief technology officer.

"We are a pretty resourceful team," Uden said. "There are always issues in new technology but so far we haven't hit any real speed bumps. We've been able to solve the problems pretty quickly."

Their device, which is not yet on the market, will benefit the cattle industry because currently sick cattle are identified by pen riders on horseback who monitor the feedlot and pull out the

animals that don't look healthy. They are good at what they do, but the average pen rider only has about four to 10 seconds a day to assess a cow's health, and not all diseases are detected accurately or early enough through visual observation, Uden said.

In contrast, Quantified Ag's smart ear tag, a small battery-powered sensor inserted into a cow's ear, monitors cow health 24/7. It not only monitors body temperature but cattle movement and head positions, which can be indications of illness. The device will be sold with a software subscription that will give feedlot managers access to the data and also allow pen riders to check cattle with their smart phones.

"We sometimes describe it as a Fitbit for Cows," Singh said.

Quantified Ag creates all of its software and

Quantified Ag ear tag helps ensure healthy cattle

The people operating Quantified Ag

Brian Schubbach, chief technology officer. Born and raised in Lincoln, Neb., Schubbach began coding software at age 6. He has 15 years of experience in the software industry as an engineer, senior technology leader, project/team manager and enterprise architect. He was a software engineer at a Lincoln, Neb., start-up and worked for the University of Nebraska-Lincoln as senior software developer in the Institute of Agriculture and Natural Resources and as senior director of software development and technology for the University of Nebraska Foundation.

Vishal Singh, president, CEO and cofounder. Born in New Dehli, India, Singh's family moved to a small Nebraska farming community in the 1980s. He worked in the computing industry with PC Today and Smart Computing magazine and in the video game industry. He has developed custom drones for plant crop imaging, 3-D visualizations of animal anatomy, mobile apps and website development. Singh worked for the UNL Institute of Agriculture and Natural Resources for 15 years as a multimedia designer, senior instructional multimedia designer and assistant professor of practice.

Andrew Uden, cofounder and chief operations officer. A Nebraska native, Uden earned both his degrees from UNL: an animal science undergraduate degree and his master's degree in applied science focused on strategic investment into African livestock value chains. He had an undergraduate internship with a top Angus bull breeder in Australia and worked with Russian Angus Genetics in Russia. Uden lives in Lexington and is one of the operators of his family's cow/calf operation and manages the data and technology services of Darr Feedlot near Cozad, which was founded by his father, Craig Uden.

works with an electrical engineering company to manufacture the device. It is being field tested in a feedlot near Milford and will be tested at Darr Feedlots near Cozad. Uden also wants to test the device on heifers at his farm near Lexington.

Although Quantified Ag currently is focusing on cattle feedlots, "I do see practical applications for ranches in the future," Uden said, adding that the ear tag could be used in the dairy industry as well.

"There is nothing like it on the market, and the biometric and behavioral data that we are collecting in real-time will benefit the entire cattle industry long term," he added.

About 2-3 percent of cattle in the United States die from disease each year. That seems like a small percentage but it represents a huge loss for cattle producers. The data collected by the device not only could decrease cattle deaths and veterinary bills, it eventually could shape cattle buying and breeding, Uden said.

"People we talk to about our product have told us that we don't even know how much we don't know about what this technology can do," he said.

by: Linda Ulrich



Vishal Singh
CEO, Quantified Ag

HONORING STATE FAIR PARK



The former State Fair Park was a place of many memories for generations of farm families and other Nebraskans who enjoyed going to the Nebraska State Fair in Lincoln.

Even though the fair has moved to Grand Island and the park has been transformed into Nebraska Innovation Campus (NIC), visible signs of the state fair remain. The renovated 4-H and Industrial Arts buildings were repurposed into beautiful new spaces, and a number of additional elements on NIC honor the State Fair of the past.

The bright reds, greens, blues and purples of the columns in the old 4-H Building have been replicated in Nebraska Innovation Studio. The metal trusses within the building are a striking architectural feature, and the shape of the auditorium pays homage to the livestock arena, said Josh Berger, director of operations for Tetrad Property Group, the site's developer. In addition, the original barn doors have been left in place.

Trees on the western edge of State Fair Park had to be removed to move dirt to make the land buildable. Although many of the trees were dead, Berger still regretted that the trees had to be cut down and came up with the idea of using lumber from the trees in some way on Innovation Campus.

Three truck loads of elm, oak, hackberry and ash were milled at Big Red Sawmill in Palmyra. Jay Ryan of Jay's Woods in Bennet transformed some of the green ash into the two-tiered top of a 22-foot-long boardroom table designed by Berger. Ryan, who enjoyed the opportunity to work with native woods, spent more than 300 hours gluing strips of ash together, which he finished with urethane. TMCO of Lincoln built



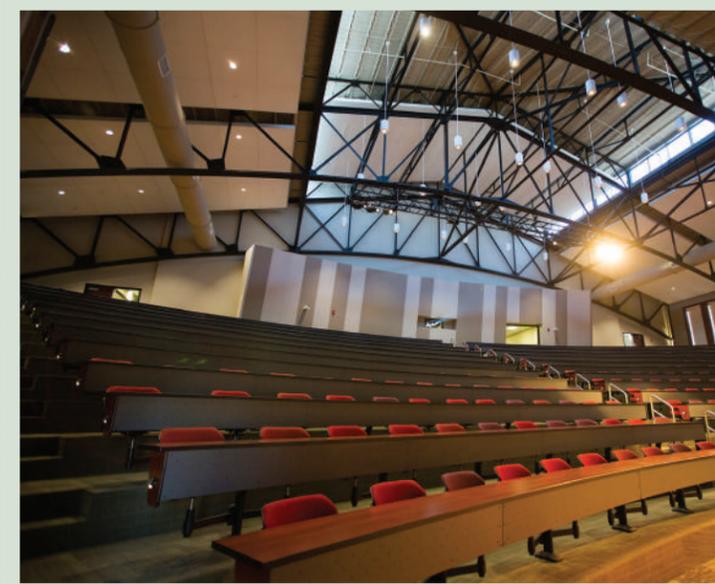
the base of the table in the NIC Boardroom, which is used by the Nebraska Innovation Campus Development Board, the Robert B. Daugherty Water for Food Institute, NUtech Ventures and other groups.

Ryan also built a second table of locust and hackberry for the Department of Food Science and Technology Food Innovation Center in the former Industrial Arts Building.

"It was a small gesture of remembrance of the state fair and a way to use materials sustainably," Berger said.

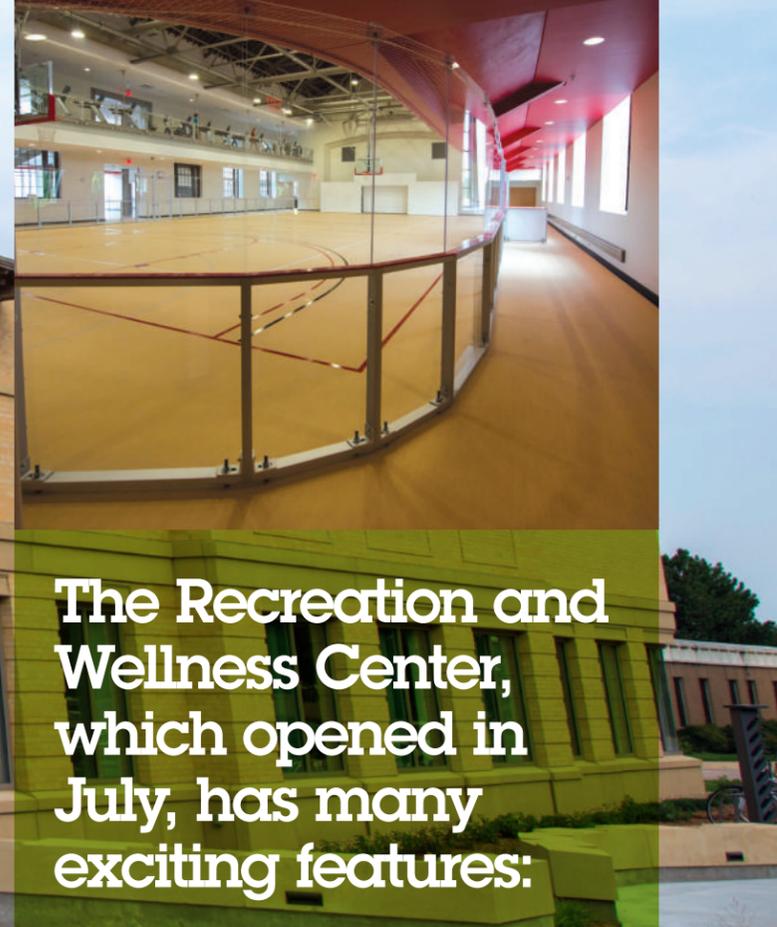
by: Linda Ulrich

Elements from State Fair Park can be found throughout NIC.





FROM HISTORIC COLLEGE ACTIVITIES HALL TO NEWLY RENOVATED RECREATION AND WELLNESS CENTER



The Recreation and Wellness Center, which opened in July, has many exciting features:

The first activity in the “College Activities Hall,” which was completed in 1926, was a faculty and student reception. About 500 faculty and students followed College of Agriculture Dean E.A. Burnett and his wife and Chancellor and Mrs. Samuel Avery in a grand march to the new building. At the reception, faculty provided the entertainment, including a skit; a “mixer” dance was held; and the Dairy Department served refreshments. The party ended at 11:30 “when university regulations decree that all activities come to a halt.”

The building, which cost approximately \$125,000 for construction and equipment, was the first building on East Campus specifically devoted to student activities. “Students in this college will now be provided with all the necessary social opportunities which can be found in any other college in the University,” wrote Dean Burnett in the May 1926 issue of the *Cornhusker Countryman*.

The University Regents originally named the building the College Activities Hall as recommended by Burnett. Over the years it was unofficially called the Student Activities Building, the College Activities Building and the East Campus Recreation Center.

Initially, the building was a combination of a public meeting place and a gymnasium. In 1926 both men and women in the College of Agriculture were required to take physical education. Showers and locker rooms were in the southwest part of the basement for women students and in the northwest corner for men. Handball courts and a few offices for physical education teachers also were in the basement.

“This is a huge addition to Campus Recreation and East Campus...usage is going to explode.”

The second floor had a regulation-sized basketball court, balconies and a stage. For events, the basketball goals were retracted and wooden chairs, along with balconies, provided seating space for about 1,200 people.

“The locker rooms gave off an aroma which permeated the entire building. Regular attendees came to expect that at least one wooden chair would collapse during each meeting,” according

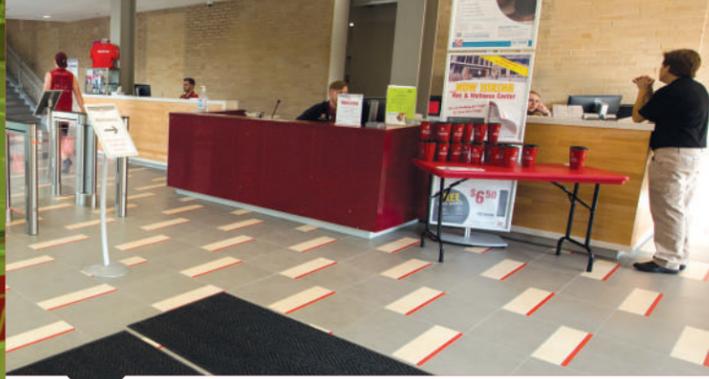
to Elvin Frolik and Ralston Graham in their book “College of Agriculture of the University of Nebraska-Lincoln — The First Century.”

Through the years, the building served other purposes, including state basketball playoffs in the 1930s and “Ag Mixer” dances. After a major renovation to the basement, it became the “temporary” union from 1946 to 1977. The handball courts were converted to Union offices, meeting rooms, a lounge and an “eating room.”

The Activities Building also housed boys during 4-H Club Week and Boys State. Girls also sometimes stayed in the building. 4-H girls slept in the basement on rows of tightly spaced cots during the State Fair. They walked between East Campus and the fairgrounds. This was not considered a hardship since some of them walked several miles from home to school, recalled the late Roma Showalter Regler, who grew up on a farm near Fairbury and showed her dairy calf at the fair.

In the early 1990s, Campus Recreation assumed management of the building. “We used the basketball court and had cardio and strength training equipment from the ‘90s until now,” said Sherri Tompkins, assistant director for member services.

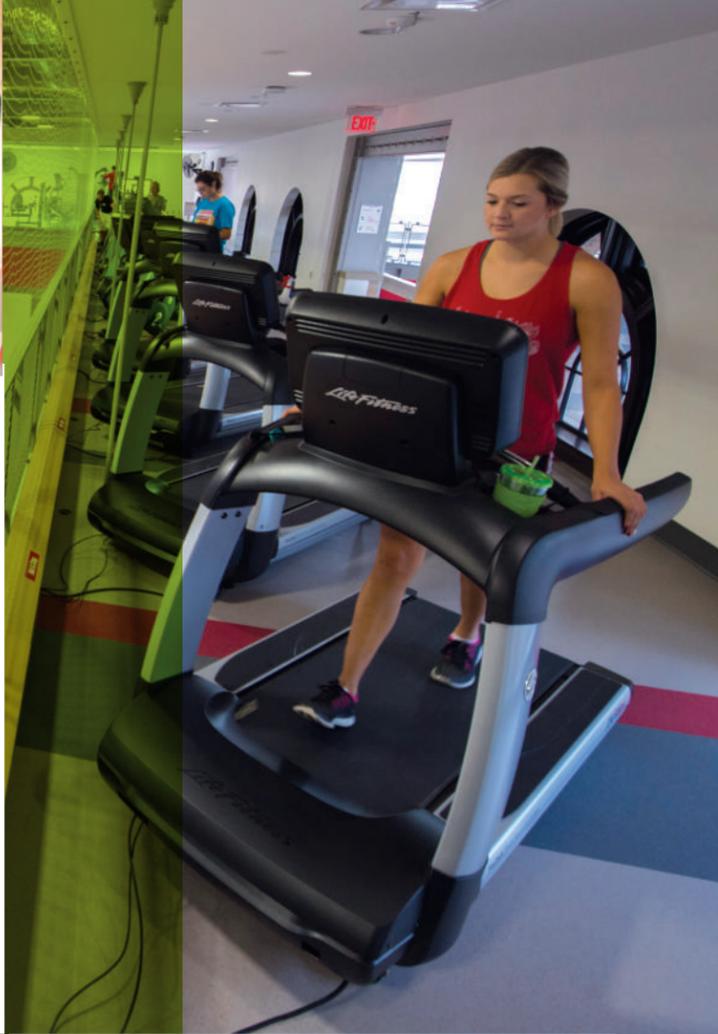
- rooftop plaza on second level with outdoor furniture for relaxation and special events
- Scooters Coffee Shop
- 56 cardio machines on two levels
- outdoor Synrgy BlueSky 360 workout station
- two-lane indoor walking/jogging track
- two indoor gyms
- strength training
- golf simulator
- classes in group exercise studios
- outdoor bouldering structure
- rental and free daily use lockers
- equipment rental
- saunas
- personal training
- injury prevention and care services
- massage therapy
- centrally located elevator
- demonstration kitchen for classes



With a \$14.89 million renovation completed this year, the building has been renamed the Recreation and Wellness Center. Campus leaders chose to expand and improve the existing historic structure, rather than build a new facility. The renovation nearly doubled the space for recreation and wellness activities. The project was part of the “Yes 2 Better Rec Centers” referendum. Approved by UNL students in October 2010, the referendum appropriated student fees to improve the quality of recreation facilities on East Campus as well as City Campus.

“This is a huge addition to Campus Recreation and East Campus,” Tompkins said. “The Activities Building was simply not designed to be a rec center. This redesigned space has so much more to offer and usage is going to explode.”

by: Linda Ulrich



...RENOVATED RECREATION AND WELLNESS CENTER



Morgan Tranmer is pursuing a degree in Integrated Sciences.

SPOTLIGHT ON: MORGAN TRANMER

Morgan Tranmer has her sights set on helping farmers in developing countries adopt better practices in their fields.

The Wilber, Nebraska, native came to UNL hoping to find a way to pursue her diverse interests in entomology and agronomy, while integrating her desire for global studies. Luckily for Tranmer, the new integrated science degree program within the College of Agricultural Sciences and Natural Resources allows students to create their own unique interdisciplinary program of study leading to a Bachelor of Science degree in Integrated Science.

Why does the integrated science degree program suit you?

This program allows me to bridge the gap between entomology and agronomy. Through my undergraduate studies, I have realized that I can fill that gap. I've really enjoyed discovering the impacts that these two areas can have on each other. This degree program has proved to be very reassuring to me by confirming that my interests in different fields can be beneficial.

The approval process for the integrated science degree program can be intense. What was that process like for you?

One of the steps of the approval process is developing a degree proposal, which includes a custom course schedule. I consulted with CASNR Associate Dean Tiffany

Heng-Moss to identify classes which would benefit me the most. The ability to build a well-rounded course schedule that's unique to my interests is what I really appreciate about this program.

Why is it important to you to take your education to an international community?

It's important to me to establish personal connections. I don't want to be secluded in a lab all day. Farmers in those regions have the knowledge, they just need the tools and someone to teach them how to implement best practices. I want to be that person in the field with them showing them new methods I've learned through my education and research.

by: Haley Steinkuhler



Yeutter Institute to prepare students for careers in global trade, finance

To prepare skilled graduates for in-demand careers in global trade and finance, the University of Nebraska-Lincoln is establishing the Clayton K. Yeutter Institute of International Trade and Finance.

The institute also will honor Yeutter's philanthropic support for the university and his career achievements. A renowned trade expert and alumnus, Yeutter has made a \$2.5 million leadership gift to create the institute.

"It is my hope that support for this institute at UNL will produce graduates with the skills needed in business, agriculture and law as we continue to expand export opportunities in the future," he said. "There is more need today for prepared college graduates

than ever before, as trade is a prime mover in the U.S. economy. It has accounted for a third of our economic growth in recent years, and our agricultural exports are at levels never deemed attainable two or three decades ago."

"We are incredibly grateful for Clayton Yeutter's leadership gift and for this investment in his alma mater," said Ronnie Green, NU vice president and Harlan Vice Chancellor of the Institute of Agriculture and Natural Resources. "Our vision is to prepare graduates who will have an unprecedented understanding of international trade and global finance so that they are uniquely prepared to provide leadership in the global marketplace immediately upon receiving a University of Nebraska degree."

In partnership with the NU Foundation, the university's initial

fundraising objective for the institute is to raise private funds to permanently endow three named chairs in agriculture, business and law for the new institute. The chairs will enable the university to hire additional, internationally leading faculty members in the areas of international trade and finance.

Undergraduate teaching will be given special attention, with the expectation that this will ultimately stimulate the inclusion of a strong international trade component in courses throughout the university. The objective will be to increase dramatically the international exposure of UNL students and create skilled negotiators in the process, a unique opportunity for the university with the potential to significantly benefit its students as well as our country.

Clayton Yeutter

- Born and raised on a Dawson county farming/cattle operation, which he managed for many years.
- Undergraduate degree in animal husbandry, J.D., and Ph.D. in agricultural economics, all from UNL, all with highest honors.
- 1978-85, President and Chief Executive Officer of the Chicago Mercantile Exchange; his tenure marked by innovation and growth that contributed to its evolution into one of the largest financial institutions in the world.
- 1985-88, U.S. Trade Representative; led the American team in negotiating the historic U.S.-Canada Free Trade Agreement, the precursor to the North American Free Trade Agreement; helped launch the most ambitious trade negotiation in history, the 100-nation Uruguay Round, which culminated in the creation of the World Trade Organization; broadened the U.S. trade agenda to encompass for the first time serious global

- negotiations in services, intellectual property, and agriculture.
- 1989, U.S. Secretary of Agriculture; steered the 1990 Farm Bill through Congress, laying the groundwork for a far more market-oriented policy structure in American agriculture.
- 1991, Republican National Committee Chairman.
- Earlier in his career, two Assistant Secretary of Agriculture posts under President Nixon and Deputy Special Trade Representative under President Ford; previously director of one of the world's largest agriculture technical assistance programs in Colombia, South America, after having served as Chief of Staff to the Governor of Nebraska.
- 1993-present, senior advisor to the international trade and investment and the food and agriculture practices at Logan Howells, one of the world's largest law firms.

THE SOWER

CASNR is thriving



Fall is in the air and weather is not the only thing changing at CASNR.

New students, professors, buildings, and activities decorate campus and help make it a very special time of year. The annual IANR/CASNR ice cream social at the Nebraska State Fair drew a record

crowd and was a great time. Thank you to everyone who attended and we look forward to seeing you at next year's event.

Our annual CASNR Alumni Reunion and Silent Auction was held Saturday, September 26th, in the Great Plains Room, Nebraska East Union. This is always a great time to visit with fellow alumni, current students and other university stakeholders.

Our CASNR Alumni Association brick program has been a huge success because of you! 287 bricks were installed this fall. Thanks for spreading the word, contributing to CASNR incoming freshman scholarships, and leaving a legacy. Look for your

brick north of Agricultural Hall. Please continue promoting the brick program and let's make Dean Waller start thinking where else we can put engraved bricks on campus.

Further out, a Burr/Fedde Reunion will take place in the summer of 2017. At that time, the new East Campus dorm will be complete and Burr and Fedde Halls will no longer be used for student housing. You can keep up to date about the reunion events by going to [facebook.com/burrfedde](https://www.facebook.com/burrfedde). Add old photos, reconnect with friends, and reminisce about good times in Burr/Fedde.

As you can see, CASNR is thriving and will continue to succeed with your support. On behalf of the entire CASNR Alumni Association, thank you for your commitment to the college and in furthering our mission, which is to cultivate and enhance our entire CASNR network.

Steve Kaiser

CASNR Alumni Association President



Henry J. Stumpf International Wheat Center to improve wheat production worldwide

The Henry J. Stumpf International Wheat Center near Grant opened June 23 with a ribbon cutting ceremony that symbolized new opportunities for state and international wheat research.

The center's purpose is to research, demonstrate and teach wheat-based system practices that improve food production on dryland and limited irrigation fields.



"Research findings will address problems that western Nebraska producers face. These practices also will be applicable to wheat production worldwide," said Don Adams, district director of the University of Nebraska West Central Research and Extension Center near North Platte.

The Perkins County location in southwest Nebraska will add important representation of high plains, semi-arid production to the Institute of Agriculture and Natural Resources' system of integrated research. It also will allow accelerated programs in the development and application of new plant science biotechnologies, he said. Technicians, scientists and graduate students, including students from other countries, will use the facility, and data gathered from the research will be published in scientific journals. The center also will be open to the public for Nebraska Extension tours, field days, workshops and meetings.

"Farmers will be able to go into the field and see the research being done," Adams said.

Crop producers were able to do just that at the West Central Water and Crops Field Day held in conjunction with the center's opening. Wheat varieties, mobile pesticide application technology and soil biodiversity for managing insect pests and plant pathogens were among the

topics discussed during the field tours. Farmers also had an opportunity to see cropping practices that maintain or increase crop production while conserving water.

The center also will house the Perkins County Extension Office, which will move out of the courthouse in Grant and into the wheat center. A cropping systems specialist will be hired to focus on research at the center.

The wheat center and 640 acres of land in Perkins County, valued at \$3 million, is a gift from Grant farmer Marvin H. Stumpf III, in honor his family, including his late wife, Pearl Stumpf; his grandparents, Nebraska homesteaders Henry J. and Margaret Stumpf; his parents, Henry J. and Darlene Stumpf; and his late wife's husband, Sam Peterson.

"This gift is about honoring my family and our Nebraska heritage," he said. "This state has meant so much to generations of my family, and it's a privilege to give back in a way that will further agricultural research and service well into the future."



COLLEGE OF AGRICULTURAL SCIENCES AND NATURAL RESOURCES **UNIVERSITY OF Nebraska Lincoln**

FOR MORE INFORMATION, CONTACT:



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Career Development & Corporate Relations Director
303 Nebraska East Union
(402) 472-8273 | jobermeyer@unl.edu

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STUDENTS TEACH STUDENTS ABOUT CIVIC LEADERSHIP



Learning about civic leadership is good. Experiencing it firsthand is even better.

Students in the Rural Civic Action Program class in the Department of Agricultural Leadership, Education and Communication (ALEC) use what they've learned to engage rural middle school and high school students in a service learning project.

This is not a traditional college course. The undergraduate students, who are called fellows, meet in the classroom nine times and travel six times to public schools within a 60-mile radius of Lincoln. The fellows help the students identify their community assets and assist them in group decision making as they choose a service learning project.

One group of students built a community garden in Nebraska City. Other students put together a website and engaged in other

activities to help unify the communities of Johnson and Brock.

A class of Weeping Water 7th graders chose the Children's Hospital in Omaha for their service learning. "While it surprised me that they didn't pick something more local, the students reminded me that their community can be defined as where you choose it to be," said Elizabeth Potter, one of the fellows working with the students.

The students toured Children's Hospital, put up posters in their school to increase awareness of children facing illness and collected donations for gift baskets that they gave to children in the hospital.

"After the project was picked, the students' imaginations took off. I was genuinely touched with the amount of empathy they were showing and how they have made this project their own," Potter said.

When the fellows return to the ALEC classroom, "there is a rich sharing of experiences because each community and each project is different," said L.J. McElravy, ALEC assistant professor who teaches the class. "The fellows learn about facilitation and that, to me, is a key leadership skill."

McElravy is appreciative of the public school teachers who allow the fellows to spend time in their classrooms.

"The teachers are telling good stories about what has happened in the classes, and there are good stories to be told," he said.

The Rural Futures Institute at the University of Nebraska helps provide funding for the program, and Nebraskans for Civic Reform is a joint partner in the program.

by: Linda Ulrich

INTEREST IN ENTREPRENEURSHIP GROWING

It's easy to think that being an entrepreneur is hard, that it is only for the Mark Zuckerbergs of the world, that it requires over-the-top intelligence and an extremely creative mind.

That's just not so, but Dave Lambe, an associate professor of practice who teaches undergraduate and graduate entrepreneurship classes, knows it does require a sound idea, a business plan, a marketing plan and a lot of motivation and hard work.

Lambe is in the Department of Agronomy and Horticulture and the lead instructor for the Engler Agribusiness Entrepreneurship Program in the College of Agricultural Sciences and Natural Resources, but his students come from a variety of disciplines, and the number of students and interest in entrepreneurship is growing.

"In the last year or two, students are showing a lot of confidence in starting their own businesses," he said.

Through a series of classes, students formulate their ideas and build plans for a business for either themselves or in a partnership.

All of the courses Lambe teaches are available online as well as in the classroom. The online option provides an opportunity for students who can't take his courses during the day as well as students who live in other states and in countries as far away as Hungary and Russia.

"I didn't want to be in the way of students completing their degrees because of a conflict with courses in the entrepreneurship minor," he said.

Despite the geographical distance of some online students, "I do get to know them," Lambe said. "They have to be more motivated, but many times their grades are better than those of students in the classroom."

No matter where students who study entrepreneurship live, many come up with good ideas for their businesses. One has a patent pending for a feedlot bunk cover. Another implemented the idea of selling forage seed to a few large dairy farms in Arizona and California and has expanded his business to across the country. One former student crafts furniture with cow horns and Nebraska native woods.

"We have some really cool students in the Engler program," Lambe said.

Even if a student decides not to be an entrepreneur, "experience in entrepreneurship gives students an edge in their careers and makes them more marketable," he said.

by: Linda Ulrich

ENTREPRENEUR COMBINES PASSION FOR PEOPLE WITH DIETETICS

Kristen Reiman got an early start on entrepreneurship by starting a cooking and candy making business while in high school.

She is still interested in food and she still wants to be an entrepreneur, but she's changed her focus. "I want to provide the tools and knowledge so people can make educated decisions about the way they treat their bodies," said Reiman, a senior from Butte, Neb.

To do this, she's studying dietetics and nutrition and exercise health science as well as entrepreneurship to become a dietitian in private practice focused on nutrition and exercise.

Entrepreneurship appeals to her because, Reiman said, **"I've always liked to think outside the box. I like to be creative."**

To get some real-world experience, Reiman is doing one-on-one nutrition and exercise counseling for a class project, and she has had internships in the University of Nebraska-Lincoln Athletics Department and with a dietitian who owns her own business. She also writes a blog focused on healthy living and faith.

"I'm passionate about people," she said. "My overarching goal is to be able to help people love and respect their bodies because I think that transcends into all aspects of life."

Reiman has taken several entrepreneurship classes taught by Dave Lambe, who has encouraged her to pursue her dream.

"He's very dedicated. It's amazing the amount of time and energy he puts into every student," she said. "You can tell from the beginning that he will help you become all that you can be."

GIFT FROM COLORADO RANCHING COUPLE BLAZING THE TRAIL FOR CASNR STUDENTS

BILL AND SANDRA CONDON CREATE FULL-RIDE SCHOLARSHIPS FOR STUDENTS STUDYING WATER AND CATTLE.

Bill Condon likes to think about the people who came before him on the land.

He thinks about the pioneers, the folks who drove wagons bound for California on the Overland Trail that carved its path through the land that later became his ranch in Colorado. He thinks of the cooks. The blacksmiths. All of the people who set up shop every few miles along the trail.

They were dreaming of a better future.

No turning back.

Bill, 87, grew up in Omaha. His father bought a ranch in Colorado when Bill was in high school, and Bill would travel out there in those years to work alongside his father on horseback. Bill fell in love with the life.

He attended the University of Nebraska in Lincoln a short time before leaving with no turning back to work on his dad's ranch in eastern Colorado. (That ranch was farther south from the 20,000 acres Bill and his wife would later own near Sterling, where they raised their children: Bill Jr., Cathy and Linda.)

But Nebraska – and the University of Nebraska – never left his heart.

“I have feelings for both states,” he says.

And even though Bill and his wife, Sandra, didn't end up graduating from the university, they both still have feelings for the place, and for the importance of education.

And for giving back.

That's why they recently created endowed full-ride scholarships for students in UNL's Institute of Agriculture and Natural Resources. The students chosen for the scholarships will be upperclassmen majoring in Water Science or Animal Science. At least one scholarship will go to a student in each of those areas of study each year.

The Condons wanted to make sure the students know what they want to do with their life and that they've already shown a love for a life studying cattle or water.

Bill and Sandra met at the university. She was a city girl who'd grown up in Lincoln. Her dad was in the insurance business. Bill had already left the university by then and had come back for a few days to visit a law school friend when he first saw her.

They married in 1952 and Sandra fell in love with the ranch life, too, though it was a culture shock at first.

“I was not raised with any farm knowledge.”

She chuckles.

“That first summer, I didn't know how to cook and I had to cook for the hay crew. My grandmother kept sending me cookbooks. I remember she said,



‘Anybody who could read, could cook.’

And so it happened.”

She also likes to think about the people who came before them on the land. They left a legacy on the Great Plains. Women would conceive and carry babies along the trail, sometimes bury them in a hole in the land before moving on. No turning back.

Over a decade ago, the Condons, who are art lovers, commissioned a sculpture from an artist friend and donated it to the university. The sculpture depicts a young pioneer woman, almost life-size, standing next to a wagon wheel. She's gazing back, but still going forward.

“No Turning Back.”

That's its name.

The woman stands in a brave pose, in bronze, on the corner of 12th and Q streets just outside UNL's Great Plains Art Museum.

The Condons gave the piece to the university back in 2000 to honor Bill's parents, who worked hard to make life better for their children. His dad, who had started working alongside his own dad at age 14, grading dirt, started his own grading company in 1901 at the age of 19. He later built bridges and dams. It wasn't an easy life. Bill's parents lived in tents in the early years and even spent one Montana winter that way.

They had challenges, heartaches. They withstood the deaths of some of their own small children. But they didn't turn back.

Over the decades, as Bill rode his ranchland on horseback, he's thought about how lucky he's been to have hard-working people like his parents blaze the trail for him.

He's thought about how hard it must have been for those folks on the Overland Trail.

“I think about them a lot, how tough it was for them,” Bill says. “Like my dad used to say, ‘What's tough depends on where you came from.’ And these people were tough.”

Bill discovered depressions in the landscape of his

land, which lies along the South Platte River. Those depressions looked manmade to him. He figured they might be stagecoach stops, so he let a historian from a nearby college and some students examine the grassland. They discovered four old stagecoach stops. Using metal detectors, they found knives, forks, shell casings, an amulet from a soldier's uniform ...

Bill and Sandra had monuments built on those four spots.

Water was so important to those folks, Bill says. Every four to seven miles along the trail, you'd have to have a stop like those because of the need for water.

Bill thinks about water a lot.

As a landowner, he was ahead of his time in water conservation. He built a recharge pond on his land that enhanced the habitat for the wildlife. (The pond allows water to divert into the underlying aquifer, and it slowly makes its way back to the South Platte.) He served on the board of the Northern Colorado Water Conservatory District for almost three decades. In 2001, the Colorado Wildlife Federation named him runner-up as “Landowner of the Year.”

He became known as “Mr. Water.”

“My legacy?” Bill says, when asked. “Oh, I guess it's just to be associated with water, and with running the ranch. Passing on your knowledge to younger people – that's my philosophy.”

Many young people, he says, just don't have the opportunities he had.

“It makes you feel like you've accomplished something,” he says, “when you can help them.”

by: Colleen Fleischer

If you, like the Condons, would also like to help blaze a trail for CASNR students, please consider giving to the institute by contacting the University of Nebraska Foundation at 800-432-3216 or by going to nufoundation.org/ianr.

“Passing on your knowledge to younger people – that's my philosophy.”





Verne Holoubek: The man behind a pop culture staple

Verne Holoubek grew up the eldest of five children on his parent's Colfax County farm near Clarkson, Nebraska. Initially, his love of farming led him to study agronomy at the University of Nebraska but advisors steered him toward agricultural journalism and advertising.

While pursuing his undergraduate degree, he never fully let go of a talent he discovered within himself in high school. While working on his family farm he created a metal sign for his Uncle Angus' farm. Holoubek, the farmer, had an artist's heart.

Amidst classes in writing and marketing, Verne pursued his artistic passions with a friend and began a hand-painted T-shirt business in the basement of the Alpha Gamma Rho fraternity house. "Before long, students were wearing my designs in class, at Husker games and all over Lincoln," said Holoubek. "I was hooked. That's when I realized I had to chase down this discovery."

His love of wearable art, printing, and marketing his designs,

became his future. In 1968, Holoubek and his wife, Terri, whom he met at UNL, moved their growing business to Milwaukee, Wisconsin, where they focused on the seasonal T-shirt market.

Perfecting a process of heat transferring art onto fabric brought the couple quick success. When Target Corp. placed his IRON-ON transfers on end cap displays in the early 1970s, the product flew off the shelves. The IRON ON heat transfers and lettering systems were sold worldwide and the printed T-shirt became a universal standard.

When Holoubek's company acquired the license to produce Harley-Davidson apparel, the black Holoubek T-shirt soon became the biker uniform.

While a successful artist and businessman, he and his wife never forgot their farming roots. Terri and Verne raised four children on a small farm west of Milwaukee. True to his boyhood history, he and his family kept a menagerie of animals and a large garden that supplied the family with fresh food long before rural gardens became vogue.

With an expanding family, Holoubek and his wife moved to a larger farm where currently, they teach six grandchildren the lessons of rural life. With one grandson next to him, he recently restored a 50-year-old combine and can boast that 90 percent of his farm is powered by solar panels.

Holoubek, the 2015 CASNR Masters Honoree, knows that while success can take you places you never dreamed, it's important to remember your roots. That's why, following the sale of the business in 2004, the Holoubeks created the Holoubek Family Foundation.

"With world travel came the awareness of large classes of people without water, food or shelter and with little chance of getting an education," said Holoubek. "The foundation was created to support the needs of children and we hope to pass on the tradition of investing in the less fortunate," he concluded.

Holoubek and his wife know that roots need watering to grow, a lesson he learned in Nebraska.

by: **Haley Steinkuhler**



"A DIALOGUE ON THE HISTORY AND VISION FOR THE FUTURE OF INTERNATIONAL TRADE FOR U.S. AGRICULTURE"

January 12, 2016 » 7:00 PM

Nebraska Innovation Campus Conference Center

Presenters

CLAYTON V. YEUTTER,

Former U.S. Trade Representative & U.S. Secretary of Agriculture

DARCI VETTER,

Chief Trade Negotiator, U.S. Department of Agriculture

Moderator

RONNIE D. GREEN,

NU Vice President & UNL Senior/IANR Harlan Vice Chancellor



LIVE WEBCAST: heuermannlectures.unl.edu

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Leave your mark at the College of Agricultural Sciences and Natural Resources. Purchase a brick that will help future students while telling everyone who walks by, you were here. Your brick can be engraved with your name or that of a friend, favorite professor, family member—anyone who you would like honored.

nufoundation.org/casnrbuyabrick

In September, UNL welcomed alumni back to campus and celebrated school spirit during homecoming week. This year, six College of Agricultural Sciences and Natural Resources students were named to homecoming court. Members of homecoming court have completed at least 75 credit hours and hold at least a 3.0 GPA.

Glen Ready
Agricultural Economics

Growing up on a small farm near Scribner, Nebraska, Glen Ready could see the opportunities in agriculture beyond the fields of his family farm. He knew he wanted to use his skill set to help people in the agricultural industry, which led him to pursue an agricultural economics degree at UNL.

Through his experiences as a UNL student, Ready has focused his desire to help in the area of agricultural policy. Ready attributes much of his success at CASNR to his relationship with professors, and hopes he can one day have the same effect on students, teaching them about agricultural policy.

“CASNR and my internship with the public policy team at the National Corn Growers Association really gave me a broader appreciation of the agricultural industry as a whole,” said Ready. “As important as science and research are, I really want to help people to understand how agricultural policy affects them.”

Larissa Wach
Agribusiness

During her time as a CASNR student, Larissa Wach has been involved with the CASNR Student Advisory Board, Engler Entrepreneurship Program, Nebraska Agriculture Youth Council, Mortar Board, Cru campus ministry, and still finds time to teach fitness classes at the Recreation and Wellness Center on East Campus.

“I’ve been able to call this home because I feel like I know everyone on East Campus,” said Wach. “I love the people and how you can make a large university feel like a small town, just by getting involved.”

The agribusiness major from Hayes Center, Nebraska, has been involved in agriculture her entire life, growing up on a diversified family farm. She has enjoyed being able to explore her interests through UNL courses and activities, and connecting them to her passions.

As a part of the Engler Entrepreneurship Program, Wach is re-establishing a business her mother founded called Creative Encouragers Prayer Organizer. The Engler program is focused on helping students take one idea and turning it into an enterprise.

Brennan Costello
Agribusiness

Brennan Costello’s interest in agriculture started when he became involved in FFA in high school in Gothenburg, Nebraska. When he was elected a state FFA officer and then a national FFA officer, Costello knew his career path would involve agriculture.

A course taught by UNL professor Tom Field helped Costello identify what area within agriculture would suit him the best. Part of the course involved creating a life plan, which is where Costello identified his entrepreneurial spirit.

“I want to own my own business one day so to see so much growth in the ag startup field is very encouraging to me,” said Costello.

Along with pursuing an agribusiness degree at UNL, Costello also is vice president of Farmhouse fraternity, capacity team lead for the Engler Entrepreneurship Program and works for a start-up company in Lincoln.

Maci Lienemann
Animal Science

With support from the Nebraska Farm Bureau and the American Society of Animal Science, Maci Lienemann served as an intern to U.S. Sen. Ben Sasse R-Neb. over the summer. It was a worthwhile experience for the UNL animal science major from Princeton, Nebraska.

“One of my main projects was to create a briefing book for the senator on biotechnology in food and agriculture,” said Lienemann. “My specific animal science interest is in genetic technology and the public policy associated with it, so the project was of great interest to me.”

Lienemann wants to use her experiences in Washington to help bridge the gap between agricultural science and policy. In addition to her animal science major, she is working on a minor in political science. She plans to attend graduate school for animal breeding and genetics, with a public policy component.

Lienemann says the same things that brought her to UNL also are what prepared her for the experience on Capitol Hill.

“I really value the land-grant mission and chose to pursue my education in a high caliber animal science program with a practical industry focus,” she said.

Tanner Nelson
Agricultural Economics

Tanner Nelson grew up in the small Nebraska town of Bertrand. It’s the kind of town where you know everyone, and are always willing to help your neighbor. That small town culture is something that Nelson was excited to find at UNL.

“I love the sense of family you get on East Campus and being a part of CASNR,” said Nelson.

The agricultural economics major is pursuing a career path that will allow him to combine his passion for people and community with agriculture and politics. Nelson’s experience as president of Alpha Gamma Rho fraternity, the Engler Entrepreneurship Program, Nebraska Human Resource Institute, Mortar Board and student government has given him a glimpse into the importance of accepting different views in the world.

“UNL has provided me with a variety of opportunities to meet people,” said Nelson. “The challenges that this has presented have been very exciting to me because when people with different perspectives come together, there’s the opportunity to solve problems.”

Liz Uehling
Agricultural and Environmental Sciences Communication

Liz Uehling grew up near Uehling, Nebraska, in a family of farmers. Her view of the agricultural industry was established at a very young age, but she knows that not everyone has been instilled with the same beliefs.

“I want to help tie the disconnect between consumers and producers,” said Uehling. “I believe advertising is a key agent for forming people’s perception of food and agriculture.”

To accomplish this, Uehling is pursuing a degree in Agricultural and Environmental Sciences Communication at UNL. Her coursework was put to the test during an internship at CropLife America, a trade association that promotes the use of pesticides, conventional and organic farming, and looks for practical solutions to feeding the world. Along with assisting in their lobbying efforts, Uehling attended several media interviews and created a video series to share with the public.



Imagine how much brighter the future would be for Nebraska and the nation if more youth became excited about STEM — science, technology, engineering and math.

Nebraska 4-H helped create some of that excitement in the Imagine Science Omaha summer camp. Omaha was one of three communities selected nationally for the Imagine Science pilot. The others were Dallas, Texas, and Orange County, California.

In addition to Nebraska 4-H, the YMCA of Greater Omaha, Girls Inc. of Omaha, and Boys & Girls Clubs of the Midlands collaborated to bring STEM activities to 9- to 14-year-old unserved and underserved youth in Omaha.

“This provides youth who had not currently been served the opportunity to experience science in new and exciting ways,” said Kathleen Lodl, Nebraska Extension associate dean. “Imagine Science Omaha was the first time these four major youth organizations worked together on a joint project. Partnering with these organizations and sharing resources allowed us to further our reach and impact.”

Nebraska Extension provided the professional development training for the staff and youth workers, and parts of the 4-H curricula were used in formulating the engaging, hands-on activities.

Extension’s Mobile Science Lab, a 13-foot tall, 20-foot long hands-on science lab on wheels, played a key role by providing activities such as extracting DNA, using a 3-D printer and building robots at “pop-up” events held in various locations in Omaha. An “Animals Inside and Out” session also was held at the Douglas-Sarpy extension office in Omaha.

“The kids really enjoyed studying the different animals,” said Maria Walker, assistant extension educator and 4-H coordinator for Douglas-Sarpy. “They were very curious about all the organs and how the body fits together.”

Youth also liked using food science to create healthy food such as smoothies. As one participant said, “science is delicious.”

All of the activities were designed to pique youth’s curiosity about STEM; to encourage their development of problem-solving skills and resilience; and to help them become better team members. The activities spanned topics ranging from chemistry to game development to music to application development in agriculture and nutrition education.

“Imagine Science was a great opportunity to reach youth we have not been able to reach before,” Walker said. “I’m very grateful for the support that extension provided for us to do that.”



Extension helps inspire youth about **STEM**

The overall goal of the pilot, which had a total of 1,500 participants, is to engage youth in STEM and to think about choosing a post-secondary education or a career in a STEM discipline, Lodl said.

by: Linda Ulrich



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