

Fall 2019



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SUPPORTING RURAL NEBRASKA



Michael J. Boehm

The past several months have brought many challenges to the people of our great state;

from severe weather and widespread historic flooding, to an irrigation canal tunnel collapse denying critical irrigation water to the panhandle’s fields, to excessive moisture during harvest. As I reflect over what

Nebraska has endured this year, I’m certain that 2019 will be viewed as

a defining year in the history of our state. The grit of countless Nebraskans was tested over and over and their resilience—their ability to bounce back—was conspicuous.

At IANR, we exist to serve and partner with the entrepreneurial and innovative producers and processors of Nebraska as they sustainably grow and produce the food, fuel, feed, and fiber needed for a growing world in a manner that ensures the resilience of our water, soil, and air the economic prosperity and vitality of our people, families, and communities.

The dedicated professionals within Nebraska Extension deserve a great deal of praise for their efforts this year. They were right there on the front lines helping Nebraskans, oftentimes their own neighbors, protect and salvage their homes, ag operations and communities. I’ve always known Nebraska Extension was a leader in many capacities, but their efforts to help our state this year have been beyond exemplary and on full display. And their desire to increase their relevance—their connectedness—to all Nebraskans continues.

Over the course of the past 18 months, Extension has engaged in a collaborative effort designed to take something that is already best in class around the country and elevate it to become even more connected with the people of Nebraska. Nebraska Extension is currently organized into five districts, and after thoughtful and strategic reorganization, these five districts will become 11 engagement zones as we roll into 2020. This reorganization will help foster stronger relationships within each engagement zone and will allow Extension—indeed the University—to better engage Nebraskans to co-create our futures.

In an effort to further explore how the university can better support the state’s rural communities, in July IANR launched a rural community prosperity

working group. The working group conducted a thorough review of successful approaches to rural community prosperity as reflected in best practices in Nebraska and elsewhere. The group also hosted listening sessions to offer Nebraskans opportunities to share their best ideas on how NU can help rural communities position themselves for economic success. Moving forward, we will use their findings to shape how the University can take action to boost our rural areas to enhance partnerships, increase economic prosperity and enhance the vitality of our communities.

This issue of Growing outlines the many ways that IANR is actively addressing challenges that are at the forefront of minds in today’s society, including disaster recovery, global trade, health and food safety, and workforce development. The Institute is uniquely aligned to work in such varied spaces given the breadth of our expertise.

To make advancements in these areas requires the support and partnership of forward-thinking Nebraskans. A prime example of how we’re partnering to benefit the state is the Northeast Nebraska Agriculture and Natural Resources Education Compact. The College of Agricultural Sciences and Natural Resources has partnered with six other institutions in the state to address workforce and talent development needs of northeast Nebraska through teacher preparation, seamless education pathways and more. To read more about the educational compact, see page 22.

As evidenced by the compact, IANR is taking unique approaches to find solutions to issues facing Nebraskans. If you have ideas on how IANR can help support our state, please don’t hesitate to share your thoughts with me. Send an email to mboehm3@unl.edu.

And as we enter the holiday season, from all of us at IANR to each of you, we wish you a safe and joyous holiday season and a very happy new year!

Michael J. Boehm, Ph.D.

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There is no charge for this magazine. Each issue describes IANR programs that benefit Nebraska and beyond. If you happen to receive more than one copy, please share with a friend.

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'FINDING ORDER IN THE CHAOS'— NEBRASKA EXTENSION STEPS UP IN WAKE OF FLOODING

Historic. Unprecedented. Catastrophic.

These were the terms frequently used to describe the flooding that Nebraska experienced in the Spring of 2019. It's nearly impossible to prepare for such widespread destruction. However, if there's a group that was uniquely positioned to support Nebraskans during such a trying time, it's Nebraska Extension.

By: Haley Apel



“We’re used to finding order in chaos,” said Ashley Mueller, disaster recovery coordinator for extension. “That’s the beauty of the county-based model of Nebraska Extension. We’re well positioned to work with partners to address local needs.”

When flood waters started to rise in March, Nebraska Extension adopted an “all hands on deck” approach to help those affected. Everyone within the organization has played a role in supporting Nebraska’s response and recovery. From office staff organizing Web resources and checking out moisture meters, to dean and director Chuck Hibberd, coordinating the University of Nebraska’s system-wide response efforts.

Nebraska Extension created an online resource hub for families, homeowners, businesses and producers. A wealth of guides and information was added to flood.unl.edu in the immediate aftermath of the flooding and new information continues to be added to that site on a regular basis. The online assistance is critical, but the in-person and hands-on help Nebraska Extension has provided is what really stands out.



A farmer trying to move his cattle to higher ground.

NEIGHBORS HELPING NEIGHBORS

“Nebraskans don’t do things because they’re flashy or exciting. We help our neighbors because it’s the right thing to do,” Mueller said.

In her role, Mueller works with faculty and staff across extension to help Nebraska prepare for and recover from disasters and widespread emergencies. In March, when the flood washed out many roads and bridges, state and national agencies were unable to get to many regions that needed assistance. Mueller put her expertise to the test by setting up and managing the volunteer reception center in Fremont, the community she calls home. The center was overrun with people wanting to do anything they could to help others.

The Extension Disaster Education Network (EDEN) was also ready to offer assistance. EDEN is a collaborative national effort by extension services at land-grant institutions across the country to improve the delivery of services to citizens affected by disasters. EDEN is supported

by the United States Department of Agriculture National Institute of Food and Agriculture.

“So many of our land-grant partners saw what was happening in Nebraska and reached out to help,” Mueller said. “It’s heartwarming to know that there are so many people who care.”

SUPPORTING THE STATE’S NUMBER ONE INDUSTRY

The flooding Nebraska experienced in 2019 was widespread and there are still some regions where the water hasn’t receded. This makes it difficult to tell truly how much damage has been done. Still, losses to crops and livestock are estimated to be around \$1 billion.

Soon after the flood, Nebraska Extension started pitching in to support producers. The Eastern Nebraska Research and Extension Center near Mead and Haskell Ag Lab near Concord served as donation locations for hay (large bales) and fencing materials for livestock owners and managers.

Hay, feed, barbed wire, fence posts, gloves, shovels and other supplies showed up by the truckload. In addition to Nebraska, donated items

came from California, Colorado, Illinois, Indiana, Kansas, Maryland, Michigan, Minnesota, Missouri and Texas. From the ENREC distribution center alone, 75 individuals picked up items of need, with several loads hauled out by the Nebraska National Guard and other support groups.

REACHING OUT TO THOSE UNDER STRESS

The strain placed on homes, structures and landscapes across the Midwest is clear to the naked eye. Nebraska Extension is also focused on the aftermath that isn’t as visible, such as the mental health and wellness of those affected by the flood. Extension has convened a rural stress and wellness interdisciplinary team of extension professionals, University of Nebraska researchers, and mental health practitioners to work with communities, agencies and individuals to improve awareness and access to care and build foundations for resiliency.



Jaci Foged, Annabelle Bielenberg, Holly Hatton-Bowers and Amy Napoli are part of Read for Resilience, a new project that will send free storybooks on trauma and coping to young flood victims across the state.

Since April, 15 workshops have been held across the state from Chadron to Beatrice focused on communicating with farmers under stress. Over 300 agri-business professionals have come together to build awareness of stressful conditions affecting farmers, identify signs of stress, understand how to work with farmers who may not cope with stress effectively and learn where to go for additional assistance.

Nebraska Extension in Buffalo County observed a need to help those in their communities who might be experiencing stress, anxiety or just overwhelmed with tasks of daily life. This community need led to the development of a task force to address stress and mental health. The 14-member task force, consisting of Buffalo County Farm Bureau, Farm Credit Services of America, Marshall Land Brokers and Auctioneers, Region 3 Behavioral Health Services, U.S. Department of Agriculture's Rural Development, University of Nebraska at Kearney and other community partners in Buffalo County, came together to form a program called Neighbor-to-Neighbor.

Neighbor-to-Neighbor introduced a grassroots approach, using community gatherings to help

"Extension is committed to helping Nebraska recover from this disaster."
 - Chuck Hibberd

rural communities be supportive of mental health wellness of local families and community members. Community businesses, government, faith-based organizations, and volunteer groups have opportunities to learn about mental wellness, build community, and encourage conversations to help reduce the

stigma associated with mental health. In August and September 2019, over 450 individuals attended community tailgate events. According to surveys filled out by the participants, the program generated positive results, with many respondents indicating they plan to make changes based off of what they learned. One participant plans to "Listen and be more proactive in creating an open space for people to come to talk."

Based on the community response an interdisciplinary team was formed. The goal of the Wellness in Tough Times team is to expand this program to other communities to help encourage healthy dialogues around mental health and wellness, and create social and community connections.

CARING FOR FLOOD SURVIVORS OF

ALL AGES

The scenes many Nebraskans witnessed during the flooding will forever be etched in their minds. It can be difficult to process the feelings associated with going through such traumatic situations, especially for young people. A Nebraska Extension-led program, Read for Resilience offers free storybooks with themes of coping with trauma, loss, grief and stress to children across the state.

The Read for Resilience team selected nine books — from “Once I Was Very Very Scared” to “A Terrible Thing Happened” — for caregivers to choose from. The books cover a range of topics, including dealing with feelings of anxiety and learning how to persevere.

The team has also created story guides for the books, which include questions for the caregiver to ask the child and activities such as making art and practicing deep breathing.

Holly Hatton-Bowers and Amy Napoli, assistant professors of child, youth and family studies and early childhood extension specialists, are lead organizers of Read for Resilience. Hatton-Bowers said using reading to heal from trauma is an evidence-based strategy with several distinct benefits. It engages both the child and the caregiver in a developmentally-appropriate way, and it also requires little training or expertise for the caregiver to implement.

“We’re hoping Read for Resilience will empower caregivers of young children to support them as they cope and understand their feelings around loss or grief,” Hatton-Bowers said. “This is

another way that Nebraska Extension will be there to help families and communities for the long haul.”

LONG-TERM COMMITMENT TO RECOVERY

While the spotlight on the Midwest may have faded since the initial flooding, many challenges remain. Water is still standing in certain areas, debris is still piled high and people are still in need of help. Early-on, after the initial flooding, Nebraska Extension Dean Chuck Hibberd said that Extension would be there every step of the way for as long as it takes, and that remains true today.

“Extension is committed to helping Nebraska recover from this disaster,” Hibberd said.

Many across the state are beginning to realize that recovery might not involve going back to the way things were before. Rural landscapes, communities and people have been forever changed. Nebraska Extension is facilitating conversations to help stakeholders evaluate what they want from their communities and what they want the future to look like.

Looking to the future, Nebraska Extension also wants to help ensure Nebraska is prepared in the event of another disaster.

“We’re using this as an opportunity to reflect and learn,” Mueller said. “We’re exploring how we can take what we’ve done and craft training and education to help others prepare.”

Donated bales accumulate at the Eastern Nebraska Research and Extension Center near Mead. Photo taken at the end of March 2019.



Volunteer Reception Center, donation and distribution site in Dodge Co.



IRRIGATION CANAL COLLAPSE

Surface-water irrigators in the North Platte River Valley south of the river in western Nebraska and eastern Wyoming lost their water supply for approximately six weeks during the 2019 growing season due to a partially collapsed tunnel and washout in the Gering-Fort Laramie and Goshen irrigation canal that occurred July 17. The water disruption affected approximately 107,000 acres of crops, or about 35% of the total acres irrigated by surface water in the North Platte River Valley in both states. Approximately 55,000 acres were affected in Nebraska and 52,000 acres in Wyoming.



Immediately after learning of the collapse, Nebraska Extension team members in the Panhandle sprang into action compiling resources on yield loss and soil moisture predictions, disaster resources, financial assistance, rural tax education and much more. Extension also facilitated public meetings for stakeholders to hear from irrigation officials about the repair efforts.

After temporary repairs, water was returned to the canal system on Aug. 28, 2019, and service to irrigators was restored in the days and weeks that followed. Both irrigation districts are working on long-term solutions and funding for a permanent fix.

RAISING NEBRASKA ADDS FLOOD, CLIMATE EXPERIENCE TO EXHIBIT SPACE

By: Shawna Richter-Ryerson

Raising Nebraska's newest exhibit addition focuses on the flooding that struck the state in March 2019; to provide context and answers on climate change, they turned to the Nebraska State Climate Office (NSCO) in the School of Natural Resources.

Sprinkled among Raising Nebraska's 25,000 square feet of exhibition space on the Nebraska State Fairgrounds in Grand Island, Nebraska, are climatologists Martha Shulski, Tyler Williams and Al Dutcher sharing their knowledge in the Trusted Voices feature.

"One of the things that makes Raising Nebraska a unique place for learning is that we connect the public to the experts," said Sarah Polak, experience coordinator at Raising Nebraska. "There is much misinformation on the Internet and in the public about agriculture, food, and weather. When our visitors have questions, we want them to have the best and most current information on a topic."

"Asking the NSCO climatologists to partner with us has allowed us to not only provide the best information, but it allows the public to hear directly from the experts on a topic."

In six short video clips, the NSCO climatologists provide the answers to commonly asked climate questions, including how climate is different than weather; how climate change and agriculture are related; and if global warming is real. But they'll also provide the answer to, "What caused the flood of 2019?" and "Are we really seeing greater weather extremes?"

Included in the exhibit is footage from the Platte River Timelapse project, showing the Platte River before, during and after the flood, and a mixed-reality experience that allows visitors to experience the height or depth of the flooding in a digital world. Polak also said new pieces will be added to the exhibit as the impacts of the weather are revealed in the long term.

The spring flood was far-reaching, stretching along swollen river veins in southern and eastern Nebraska. Farms were destroyed, livestock lost and communities severely damaged. Some areas remain under water, some areas are experiencing new flooding, and transportation and commerce are still being affected.

"To capture the impact (of the extensive flooding) in a short amount of time in a way that is meaningful is very

difficult,” Polak said. But they hope all visitors, Nebraskans and non-Nebraskans, learn from the exhibit the scope of the spring’s weather events and their impact on the state.

“This past spring, and now summer, the public saw examples on TV and online of these farm and ranch families struggling due to weather. They also saw the impacts of weather on urban areas as well,” she said. “We knew we could create an opportunity for people to talk about what happened, how it happened, and why it happened from a fact-based place that can help people understand the events.”

Polak said they also hope to increase the understanding about climate; and to better illustrate the connections between weather, climate and agriculture.

Raising Nebraska is an award-winning agricultural literacy experience on food and the families who grow it. It’s also a collaborative effort among the University of Nebraska-Lincoln’s 4-H and Extension programs.

“There is probably no more trusted source in the state of Nebraska than Extension,” Shulski said. “Educators live and work in the communities they serve, know their stakeholders well, and most importantly will be a familiar face to talk about these topics. Trust leads to greater engagement, which hopefully will lead to better outcomes.”

To be among the voices trusted by Nebraskans is an honor, and a position the state climate office doesn’t take lightly. The mission, after all, is to arm stakeholders with the information they need to make decisions important to their lives.

Their excitement and passion for working on the project was evident to Polak from the first meeting.

“The spirit of collaboration and creative energy in working on this project has been wonderful,” she said. “We are thankful to the NSCO and the climatologists for their support of this project and we look forward to continuing this partnership into the future.”





Nebraska-developed tool suite brings context to climate change

By: Shawna Richter-Ryerson

Planning for climate change isn't easy. The complexity of the issue itself is hard to digest, let alone translate into action items. But a new suite of tools designed by a group of University of Nebraska-Lincoln researchers gives municipal planners a clearer climate picture of what to expect and prepare for.

"Climate is not always tangible," said Natalie Umphlett, co-lead on the project dubbed Climate for Cities, and regional climatologist with the High Plains Regional Climate Center in the School of Natural Resources. "But our website offers tangible tools you can use and interact with to help make better decisions when planning for the future."

The project, funded by the National Oceanic and Atmospheric Administration, provides climate data in a variety of forms, including historical trends and projections, for a range of variables.

The potentially greatest display of that information comes in the form of the "sister city" tool. The tool covers the 10 states in

the Missouri River Basin and pairs up hundreds of cities of varying sizes, providing a look at what one's current climate might look like in the future. By 2055, for example, Lincoln's annual temperature could be like Wichita, Kansas, and by 2099, like Joplin, Missouri, under a scenario where efforts have curbed greenhouse gas emissions enough to reduce the current trajectory.

The Web tool also opens the door to see how that sister city has handled current climate issues, such as drought, mosquitoes or excess heat.

"Many communities do not have the resources to develop climate reports and tools on their own," Umphlett said. "This gives towns both big and small the chance to begin to explore their climate. No one is left behind."

Users will also find a searchable database for planning documents from 18 municipalities, detailing current and potential issues and solutions.

"We've catalogued all these plans by various topics. So, when you search for, say, green streets or sustainable infrastructure, the results will take you to the exact page of the plan that covers the topic you are interested in," Umphlett said. "It's beneficial to see how others have implemented policies around these topics."

The website is the result of two years' worth of work with 11 cities in Nebraska, Iowa, Kansas and Missouri,

and with university partners Martha Shulski, co-lead on the project from the Nebraska State Climate Office; Zhenghong Tang of community and regional planning; Tarik Abdel-Monem of the University of Nebraska Public Policy Center; the Bureau of Sociological Research; and Frank Uhlarik of the City of Lincoln.

The project was designed to help municipalities prepare for changes in climate, including higher temperatures, increased rain events and more erratic weather, all of which affect city services, utilities, industries, public health and city budgets.

Each of those 11 cities received personalized climate reports that describe their expected change in temperature and precipitation, as well as the implications of those changes. Lincoln's report indicates the city will see more single- and multi-day heavy-rain events, which could lead to more frequent flooding, soil erosion and decreased water quality, though the city also is likely to see more drought.

The researchers acknowledged that the reports represent a snapshot in time, and while the online suite won't replace the report, it can enhance its use, as the climate data available will be up-to-date.

Early feedback has shown users expect to use the website to develop mitigation or adaptation plans and to validate decisions being made, as Lincoln plans to do.

"The climate report for Lincoln reaffirms earlier work by UNL published in 'Understanding and Assessing Climate Change (2014)' and forms a solid foundation for

the city to ramp up mitigation and resiliency efforts," Uhlarik said. "While we have included various mitigation goals in our 2017 'Lincoln Environmental Action Plan,' we fully intend to more broadly address resiliency efforts both in our comprehensive plan updates and utilities master plans in 2019-2020."

Over the next few years, the researchers intend to continue garnering feedback to improve and refine the tools, potentially expanding the site to cover specific industries or additional states.

"This work represents stakeholder-driven research that provides cities with a suite of usable climate information to help reduce risk to local climate-change impacts," Shulski said.

"We learned a great deal about municipal decision-making and climate communication, and the users are provided with synthesized and actionable planning tools."




The City of Lincoln built a system to help manage Antelope Creek water flow and prevent flood damage through downtown Lincoln. The project was completed in 2012.

NAMIBIA EXPERIENCES SHAPE OUTLOOK OF NEBRASKA PROFESSOR, STUDENTS

By: Brianne Wolf

As the world becomes increasingly interconnected, the Institute of Agriculture and Natural Resources aims to make an impact not only locally and nationally, but also globally. As a comprehensively internationalized institution, IANR is a strong international economic development partner for Nebraska, and faculty are engaged in collaborative efforts to address the world's most daunting challenges. We're also committed to making sure students are prepared to live, work and serve in an increasingly interconnected world. One way that is achieved is through study abroad opportunities.



A group of ten people, nine young women and two men, are posing for a group photo in a vast, arid landscape. The ground is a mix of red soil and greyish-brown sand, dotted with small, scattered trees. In the background, a range of rugged, reddish-brown mountains stretches across the horizon under a clear blue sky. The group is arranged in two rows: a back row of nine people standing and a front row of two people kneeling. They are dressed in casual, outdoor-appropriate clothing like t-shirts, tank tops, shorts, and hats. One woman in the back row wears a black t-shirt with a globe logo and the letters 'LAAS'. Another woman wears a red t-shirt with 'RED 70' on it. A man in the front row wears a dark blue t-shirt and a baseball cap. The overall scene is bright and sunny, suggesting a clear day in a warm climate.

“There was a pivot when I went to Namibia and saw incentives at work with private landowners, and how they had brought wildlife back onto these ranches.”
- Larkin Powell

Back row: (from left to right) Nicole D'Angelo, Erin Klein, Hannah Miller, Allison Hough, Sarah Spier, Miranda Michalak, McKenzie Hauger, Lauren Southard, and Paige Krupa; Front row: Larkin Powell and David Henderson

Larkin Powell is a wildlife biologist and professor in the School of Natural Resources interested in the conservation management of our fish and wildlife species. In his research, he investigates how our manipulation of habitat affects wildlife. In his teaching, he strives to introduce students to experiences that will help them develop into informed wildlife managers and decision makers. Every other summer, he leads a group of Nebraska students on a tour of Namibia, where the students encounter wildlife most have only seen on the Internet, or at best, in zoos.



Student Katie Lawry gets up close and personal with wildlife at the Otjitotongwe Cheetah Guest Farm.

“The first time you’re all in a bus together, pulling up at a water hole and there’s an elephant standing there ... it’s fun to watch the students, to see their wide-eyed looks. They’re talking in whispers,” said Powell.

Beyond the initial amazement of seeing such creatures up close, he says the program offers students the opportunity to experience diverse perspectives of wildlife management.

“It’s different in every country; what’s legal, what’s encouraged, where the power structure is from the landowner up to the federal government,” said Powell. “There are certain things (they see in Namibia) that you won’t ever see in Nebraska, but you can see how those systems of incentives work, and how they might be used to get conservation happening on the landscape here.”

Powell involves cultural, human aspects to the program in addition to the wildlife component,

saying it helps the students better understand why people make the decisions they do.

“A few times, we stayed at private farms with tourism operations. One operator was originally shooting cheetahs to protect his livestock, then realized people actually wanted to see them (the cheetahs). It allows the students to see the effect of how a real person changed their approach in addressing human-wildlife conflict,” said Powell. “Another couple has a few bungalows that they rent out to tourists. They used to be a livestock operation, but droughts forced them to sell their herds. They talk about if they hadn’t got into tourism, they would have had to sell their land. It’s a great way to demonstrate to students the impact of diversifying farm income.”

Even within the country, the students are able to witness different approaches by conservation organizations. For example, one group works closely with farmers, with the philosophy that if production increases, the owners are less likely to shoot wildlife like cheetahs on their property. Another group is more protectionist, and their approach is to remove “problem animals” from farms. Powell’s program is intentionally structured to create opportunities to observe different types of models, and includes ample time to reflect on the experiences, both individually and in groups.

“We set the students up with different approaches then let them critically evaluate them. The students come back to base after each experience and we talk together and debrief,” he said. “We’re traveling in a group, but the students are each going to have individual experiences. So when they’re at a campsite in remote Namibia, and the sun comes up over the mountain and the acacia trees, I encourage them to not just stay in their tent, but go out and sit on a rock and think about things ... have an experience in solitude.”

NEBRASKA TO NAMIBIA

While now known for leading trips to Namibia (he’s led or co-led five since 2011), Powell’s work as a faculty member leading students abroad began a bit closer to home, leading students on trips to the boundary waters of Minnesota, then to Puerto Rico, then ultimately Namibia.

Powell’s interest in Namibia was sparked while exploring locations for his sabbatical work in 2009. Seeing an opportunity to teach about grazing and wildlife at Polytechnic of Namibia, Powell reached out to his colleague, Mark Pegg, a fisheries ecologist and associate professor in the School of



Larkin Powell guides student Tara Klimek in her mist-netting technique as they observe sociable weavers.

Natural Resources, who had been leading students to the country since 2005. With contacts Pegg had developed during his time there, he was able to help Powell pursue the opportunity, and eventually secure the position to spend his year of sabbatical teaching and researching at the institution.

“Thanks to Mark, I had this yearlong experience to learn more about the country and to teach, which required me to learn even more,” said Powell. “It’s a great example of colleague collaboration and leveraging and building on one another’s experience.” When he returned to his post in Nebraska, he and Pegg began co-leading the education abroad trip to Namibia. Later, when Pegg’s research took him to Canada, Larkin carried on. “It was kind of a ‘passing of the baton’ in a way,” said Powell.

In addition to helping students expand their perspectives on wildlife management, and the world, Powell says his own research has shifted since his sabbatical in the country and his regular trips leading students.

“There was a pivot when I went to Namibia and saw incentives at work with private landowners, and how they had brought wildlife back onto these ranches,” said Powell. “We have private lands in Nebraska; we have farmers and ranchers.”

At the time, he’d been researching how landowners could increase pheasant production through farm bill programs, but the realities of increased commodity prices made the strategy less economically feasible for landowners. He returned to Nebraska with a renewed appreciation for the importance of economics in these models and began to shift his focus beyond just the wildlife research to the humans in the equation.

“I just finished a textbook for my course. ‘2007 Larkin’ would have written that completely differently than the ‘2010 Larkin’ after coming back and having that experience,” said Powell. “Now eight years later, it really

reflects my thinking more about economics and the interactions between the people that own the land.”

“I found what I was looking for on sabbatical: a way to integrate my research with society rather than being just a separate piece.”

INTERNATIONAL EXPERIENCE IMPACT

Powell understands how much an international experience can impact a student, especially those who may not have had the means or opportunity before. As a “farm boy from southern Iowa,” he said, funding support made possible his first trip abroad: an eye-opening experience in Hungary as it was coming out from behind the Iron Curtain in the late 80s. For many students in his program, the trip may be the first time they’ve flown without family or the first time leaving the country.

“You can watch students make progress over the course of the trip. Sometimes it’s little things, like seeing them not complain if they can’t understand someone’s accent—because they realize this person speaks five languages and they maybe speak one,” he said. “You see how the students learn about differences and diversity, how U.S. actions impact other parts of the world, and how so many things intertwine.”



Beyond the larger perspective students gain, he feels they come back with skills that, while not always easy to articulate on a resume, give them an edge as they enter the professional world.

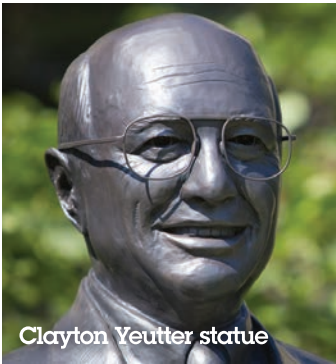
“When I look at students who have gone on these trips, they’ve become very good at how they interact, lead, organize; even how they can take a meeting from chaos to order,” said Powell. “We’re not teaching leadership, but we are teaching relationships.”



Yeutter Institute Director Jill O'Donnell interviews Nebraska Governor Pete Ricketts for the inaugural episode of the Trade Matters podcast.

Yeutter Institute brings new opportunities for students, public

By: Brienne Wolf



Clayton Yeutter statue

During a student-led panel at the Yeutter Institute's international trade conference on October 10, University of Nebraska Law student Sarah Barrett asked former U.S. Chief Agricultural Negotiator Darci

Vetter about possible solutions to U.S.-China trade tensions. Vetter emphasized that the future of the agricultural sectors in the U.S. and China, as well as other sectors, are closely tied together, and that trade is intertwined with other areas of the overall relationship.

"I've been thinking a lot more about whether having a trade conversation and an ag productivity conversation and a security conversation separately really gets us to the set of tradeoffs we might need to try and change their [China's] behavior," Vetter said.

The Yeutter Institute, a formal collaboration among the Colleges of Law, Business, and Agricultural Sciences and Natural Resources, is designed to join together the conversations that Vetter described. Her comments highlighted the interdisciplinary nature of international trade, the numerous forces that shape it, and the core mission of the Yeutter Institute: connect relevant disciplines to equip students for successful careers in trade and finance, increase public understanding, and produce new research.

The conference, "What's on the Horizon for International Trade?" was the Yeutter Institute's largest event to date, presented in cooperation with the Nebraska Farm Bureau. Attendees—including state government leaders, industry representatives, agriculture producers, university faculty, staff, and students, and the broader Nebraska community—heard from experts about the crisis at the World Trade Organization, the impacts of retaliatory tariffs on Nebraska's economy, how free trade agreement negotiations are re-making the competitive landscape, and possible scenarios for the outcome of current U.S. negotiations with China.

The daylong discussion underscored the need for

graduates from many different disciplines to be involved in international trade, from scientists who can address technical and new digital aspects of trade to legal strategists in government or business, to journalists who cover these issues for the public, and scholars who research new frontiers in economics, supply chains and international relations.

"There is a place in the Yeutter Institute for students from every major," said Yeutter Institute director Jill O'Donnell. "Our first undergraduate course offering was a striking example of that, with students representing over a dozen majors from three different colleges who came together for a simulated trade negotiation."

The one-credit course, offered in February 2019, featured guest lecturer Andrea Durkin, a veteran U.S. trade negotiator and editor-in-chief of TradeVistas who teaches a similar course at Georgetown University. For law and graduate students, the institute offered a fall 2019 course through the College of Law called "International

Trade: Agriculture, Food and Wine," taught by visiting professor David Morfesi, Special Counsel and Director of International Trade at MinterEllison, Australia's largest law firm. Morfesi will return to teach another course in spring 2020.

The Yeutter Institute was the vision of Nebraska native, University of Nebraska alumnus and former U.S.

Trade Representative and U.S. Agriculture Secretary Clayton Yeutter. President George H.W. Bush once called Yeutter "a game changer in the area of trade and finance." He led negotiations that resulted in the U.S.-Canada Free Trade Agreement, opened the Japanese market to U.S. beef, citrus, and semiconductors, and played a critical role in launching the negotiations that resulted in the creation of the World Trade Organization. The NU Board of Regents approved the creation of the Yeutter Institute in December 2017. Jill O'Donnell began as the institute's first director in July 2018. Dr. John Beghin began on June 1, 2019 as the new Michael Yanney Chair in International Trade and Finance in the Department of Agricultural Economics and the Yeutter Institute. Professor Matt Schaefer, the Haggart/Work Professor of International Trade Law in the University of Nebraska College of Law, is also integral to the Yeutter Institute. Two more faculty chairs will be hired, one each in the College of Law and the Department of Economics in the College of Business.

"Our early successes around opportunities for students to grow in their knowledge and confidence in working with these issues are creating a sense of community around the Yeutter Institute."

– Jill O'Donnell

Some of Yeutter's former colleagues now serve on the 13-strong Yeutter Institute Advisory Council, which was announced in February 2019. Located in Nebraska, on both coasts, and places in between, the council members' collective expertise spans the areas of trade policy and law, commodities markets, global business operations, trade and development, and advanced trade and finance education. The members convened in Lincoln in October—some traveling to Nebraska for the first time—for their first meeting to provide strategic counsel on the institute's formation and growth.

The Yeutter Institute's three mission sets—education, research, and outreach—aren't pursued in isolation. A pilot internship led by Dr. Beghin is a good example of blending learning, applied research, and partnership with a Nebraska company. During the summer of 2019, Beghin worked with agricultural economics major Gerald Van Tassell to develop a customized research product assessing new and expanded export markets for a Nebraska agribusiness firm. Students also learn by being part of the outreach mission through the Yeutter Institute's "Trade Policy Conversation Starters," featuring their own research. Yeutter Institute Honors Interns Bret Klabunde, Emily Loftis, and Olivia Coffey kicked off the project in spring 2019 by producing

briefing papers on trade policy questions published on the Yeutter Institute website. Their reports covered China's response to soybean tariffs, U.S. legislation on the authority to impose tariffs, and the potential to increase Nebraska exports to Indonesia. Students have also helped update the institute's "International Trade and Finance Calendar" with trade-related online events, Congressional hearings, and government requests for public comment. This resource, available on the Yeutter Institute website, is for anyone seeking ways to learn more about trade or weigh in on trade policy.

"Our early successes around opportunities for students to grow in their knowledge and confidence in working with these issues are creating a sense of community around the Yeutter Institute," O'Donnell said. "I am seeing the same students involved with multiple Yeutter Institute events and they are asking, 'what's next?'"

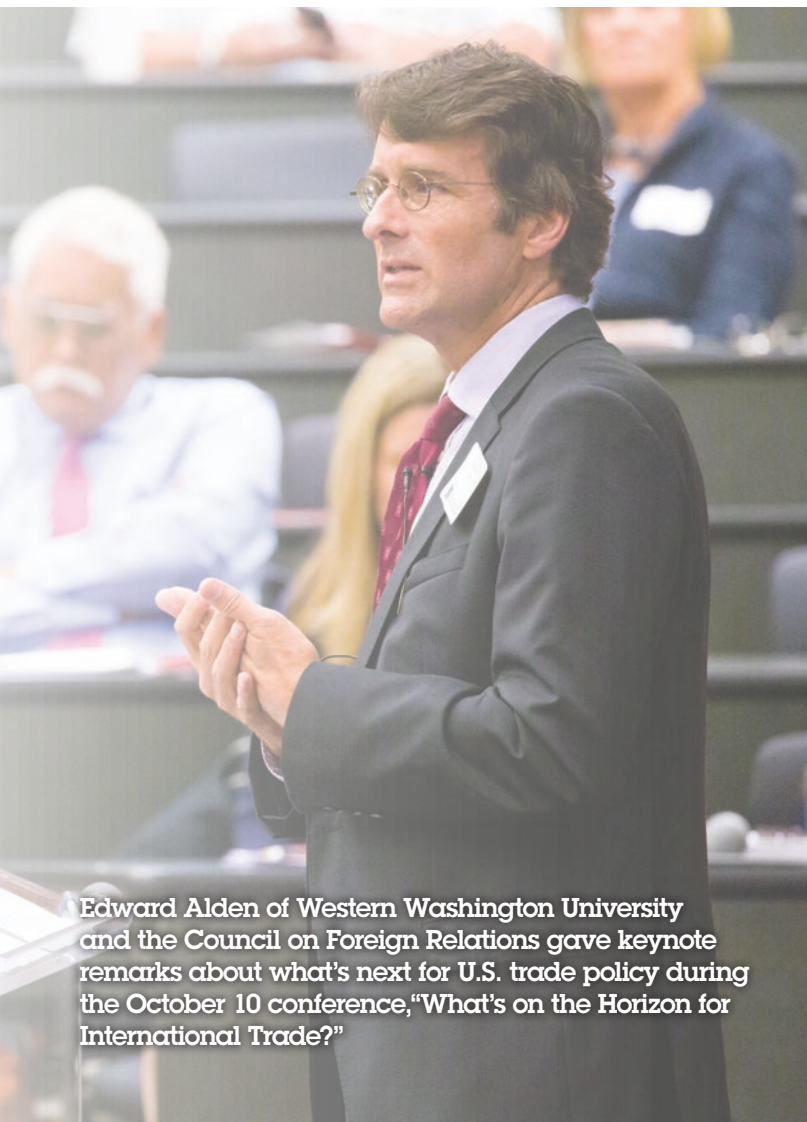
Forthcoming in 2020 will be new educational opportunities, a public conference, and a new report examining Nebraskans' perspectives on the economic impact of U.S. foreign policy—all in line with making the Yeutter Institute a "game changer" for students, researchers, and the public, the way Clayton Yeutter was for international trade.



University of Nebraska professors Matt Schaefer (College of Law) and Dr. Uchechukwu Jarrett (College of Business) opened the October 10 conference with a primer on key legal and economic trade concepts.



Nebraska law students Sarah Barrett and Nichole Sklare and Nebraska business student Justin Myers interview former chief agricultural negotiator Darci Vetter during the October 10 conference.



Edward Alden of Western Washington University and the Council on Foreign Relations gave keynote remarks about what's next for U.S. trade policy during the October 10 conference, "What's on the Horizon for International Trade?"

Podcast shows why "trade matters" to Nebraskans & the U.S.

In line with its education and outreach mission, the Yeutter Institute was proud to launch the Trade Matters podcast in the fall of 2019. Currently in season one, the podcast makes trade relatable, considering new developments, longstanding trends and the potential impacts of both. Yeutter Institute Director Jill O'Donnell hosts each episode, interviewing guests to illuminate an aspect of trade policy-making behind the scenes.

"Trade matters to everyone, and this podcast showcases that with lively conversations revealing trade's role in numerous facets of life



and policy," said O'Donnell. "So far on the show, we have heard a decorated combat veteran and former U.S. Defense Secretary discuss the use of the term 'trade war' and the role of economics in national security; a governor discuss the complexities of responding to Washington's decisions on trade; a banker explain how trade policy changes impact risk dynamics in global banking, and more."

Guests have included Nebraska Governor Pete Ricketts; Edward Alden, Ross Distinguished Visiting Professor at Western Washington University and senior fellow at the Council on Foreign Relations; Michael Salerno, Vice President of Global Banking for First National Bank of Omaha; and Chuck Hagel, former U.S. Senator from Nebraska and former U.S. Secretary of Defense.

New episodes of Trade Matters are released biweekly and are available on iTunes, Stitcher, Spotify, TuneIn and other major podcast platforms. If there are topics listeners would like to hear about or guests they might like to hear from on the podcast, please send them to yeutterinstitute@unl.edu.

CASNR grads making an

By: Haley Apel

As a brighter spotlight is placed on the agriculture and natural resource industries to provide food and water security for future generations, the University of Nebraska–Lincoln’s College of Agricultural Sciences and Natural Resources is doing its part to prepare the next generation to take on this daunting task. CASNR celebrated its largest-ever graduating class in spring 2019. One of the attributes that has helped the college excel is the focus on a holistic, well-rounded experience.

“It’s important for students to take advantage of their time as a student in CASNR, to truly help them discover their unique talents and strengths” CASNR Dean Tiffany Heng-Moss said. “To guide them on this exploration, we foster an inclusive environment that empowers students to make their mark in the college, the state and the world.”

That inclusive environment goes far beyond the walls of the classroom. CASNR has created numerous opportunities for students to take advantage of their time in the college, to help them grow professionally and personally. Traveling abroad, participating in campus-based research, completing internships and engaging with the local community are common experiential learning opportunities for CASNR students.

While the experiences of CASNR grads are diverse, what unites the community is science. The foundation of all 30 degree programs offered by the college is science. Alumni have the opportunity to use the application of that science to solve grand problems and create opportunities in their professional careers.

With a wealth of diverse experiences, and a degree grounded in science, CASNR graduates are prepared to pursue careers in a variety of industries. This year’s CASNR alumni can be found in a number of places, from the classroom to the operating room and from the cornfield to the corner office.



Jordan Classen,
operations
management
associate, Cargill

When first starting to think about a career, Classen had a difficult time narrowing her interests. The mechanized systems management major from

Fayetteville, North Carolina, knew she wanted to work in the agricultural industry, but didn’t know in which field. To help her turn her passion into a career path, she turned to her academic adviser.

“My adviser was able to introduce me to different industry professionals that I could learn from,” Classen said.

CASNR has a rich heritage of individualized undergraduate student advising by faculty. While CASNR’s traditional advising model has evolved to include professional advisers, the commitment to personalized advising remains a hallmark of the college.

“I really like how important every single person is in CASNR,” Classen said. “I never felt like I had to follow a cookie-cutter example, and everyone I interacted with took interest in me personally.”

This advising coupled with several on-campus experiences—such as being president of the Mechanized Systems Management Club, communications officer for the American Society of Agricultural and Biological Engineers Club, member of the quarter-scale tractor team and student ambassador for the Department of Biological Systems Engineering—prepared Classen to launch her career. During the CASNR Career Fair held on campus every fall, she connected with representatives from Cargill, which led to an internship and full-time position as an operations management associate in the Albion, Nebraska, office.



**Becky Brooks, medical
school student,
University of Nebraska
Medical Center**

Brooks plans to become an oncologist or an obstetrician-gynecologist one day. The Lincoln native took her first step toward reaching this goal by pursuing a degree in biochemistry through CASNR, while minoring in chemistry, psychology and mathematics. Beyond her academic pursuits, Brooks was active on campus, serving as a New Student Enrollment orientation leader and chemistry lab teaching assistant and conducting research.

“I was funded by UCARE to conduct research on immigrants and children of immigrants pursuing

impact across industries

degrees in STEM fields at community colleges in Nebraska,” Brooks said.

Nebraska’s Undergraduate Creative Activities and Research Experiences (UCARE) program supports undergraduates to work with faculty mentors in research or creative activities. Students receive stipends to engage in intensive research or creative activity for 20 hours per week. That faculty mentorship played a significant role in shaping Brooks’ CASNR experience.

“As a student in CASNR, you are mentored by many members of the CASNR faculty,” Brooks said. “When I needed a co-adviser for my thesis, many CASNR faculty members were willing to guide me in the research and writing process. CASNR wants to help you be successful and fosters a sense of academic excellence and curiosity in every student.”



Kara Sybrant, agriculture teacher, Rock County High School

Sybrant, a Springview, Nebraska native, said she wouldn’t trade her CASNR experience for anything.

“My favorite part of being a CASNR student was being able to walk across campus and know almost everyone I met,” she said. “I credit this to being involved in several activities and having a variety of classes with a variety of majors.”

Sybrant was involved in Sigma Alpha and the Agricultural Education Club, served as a teaching assistant for a genetics course, and was a student worker in the Department of Agricultural Leadership, Education and Communication and a student coordinator for FFA career development events. She plans to use these experiences to support students while teaching agriculture at Rock County High School in Bassett, Nebraska.

“Each student is so unique, and I want to provide as much as I can for them as individuals,” Sybrant said.

Supporting individuals, not just students, is a concept that CASNR has embraced, as well. CASNR Cares—Caring Attitudes and Respect for Every Student—is a hub for students, parents, faculty and staff to start with when there are questions or concerns that affect a student’s educational experience. The program can help

students if they have a family or health emergency and can’t attend class, have trouble adjusting to college or just need someone to talk to.

“CASNR Cares is one reason CASNR has such a high student-retention rate,” said Nicole Smith, CASNR’s student development and CASNR Cares coordinator. “Students know where to go when they have questions or need help.”



Matthew Brugger, entrepreneur, Upstream Farms

Brugger wants to provide a new narrative of what modern agriculture could and should be. To do this, the Albion, Nebraska, native has launched a business venture with his brother and fellow CASNR alum Joe, called Upstream Farms. Their mission is to cultivate integrated solutions for producers and healthy food options for families, and to build rural communities.

While pursuing a degree in applied science, Brugger also minored in animal science, agricultural economics and Engler Entrepreneurship. The Engler program offers an academic minor that fosters the development of professional skills conducive to success in entrepreneurship. According to Brugger, Upstream Farms wouldn’t exist if it weren’t for the Engler program.

“The Engler Entrepreneurship Program up to this point has been the single most beneficial decision in my life,” he said.

In addition to managing an integrated crop-livestock operation near Albion and offering agronomic support to producers, Upstream Farms is supporting rural communities by providing everything from coaching to capital. The brothers believe that their lessons learned and success in the field can translate to main street, and help small communities thrive.

“Upstream Farms is a reflection of myself and my values, as well as my single biggest passion,” Brugger said. “I would never have been able to pursue that without CASNR.”

COMPACT AIMS TO BOOST AG, NATURAL RESOURCE INDUSTRIES IN NORTHEAST NEBRASKA

By: Haley Apel



Toni Rasmussen, agriculture education teacher at Wayne High School, works with her Ag Leadership and Intro to Ag class in October 2018.

The University of Nebraska–Lincoln has entered into an education compact with six other Nebraska institutions to meet the education needs of youth and lifelong learners in northeast Nebraska and contribute to workforce and talent development to support economic growth strategies in agriculture and natural resources.

The Northeast Nebraska Agriculture and Natural Resources Education Compact was signed during a ceremony Oct. 29 at Wayne Junior/Senior High School in Wayne. In addition to the College of Agricultural Sciences and Natural Resources at Nebraska, others signing the compact were Little Priest Tribal College, Nebraska College of Technical Agriculture, Nebraska Indian Community College, Northeast Community College, Wayne Community Schools and Wayne State College.

“This compact will leverage the combined strength of the involved institutions to improve college and career readiness, educational attainment, and community and economic vitality and growth in the region,” said CASNR Dean Tiffany Heng-Moss. “I look forward to working with our partners to co-create educational solutions for northeast Nebraska.”

Mike Boehm, Harlan Vice Chancellor for the Institute of Agriculture and Natural Resources at Nebraska, said: “Over the past few years, IANR has engaged in many great conversations with the 217,000 people that call northeast Nebraska home. These conversations were critical to shaping our collaborative efforts with compact partners on issues that matter to the success of our students and lifelong learners and the vitality of our communities.”

The goals of the compact include providing education platforms for the continuum of learners in resilient food, energy, water and societal systems that align with career opportunities for an evolving workforce for communities. This will include developing an inventory of formal and nonformal agriculture and natural resources education programming, establishing an open-access database of curricula for K-12 and nonformal learners, and designing education platforms for the continuum of learners that align with labor market demand for agriculture and natural resources.

In response to the increased need for highly qualified K-12 agricultural science and STEM

educators, the compact will establish professional-development programs and workshops for nonformal educators, and align STEM teacher preparation programs and curricula with agriculture and natural resources systems. The institutions will establish a northeast Nebraska teacher network program for STEM and ag educators. There’s also an opportunity to leverage partnerships and programming offered by educational entities such as Nebraska Extension, the Nebraska Department of Education, Ag in the Classroom, educational service units and Nebraska’s agricultural commodity groups.

The institutions will also explore strategies to remove barriers for learners to seamlessly transfer among post-secondary institutions. This will involve a review of curricula, enhanced collaboration among academic and career advisers, and the creation of pathways that are linked to agriculture and natural resource workforce needs in the area.

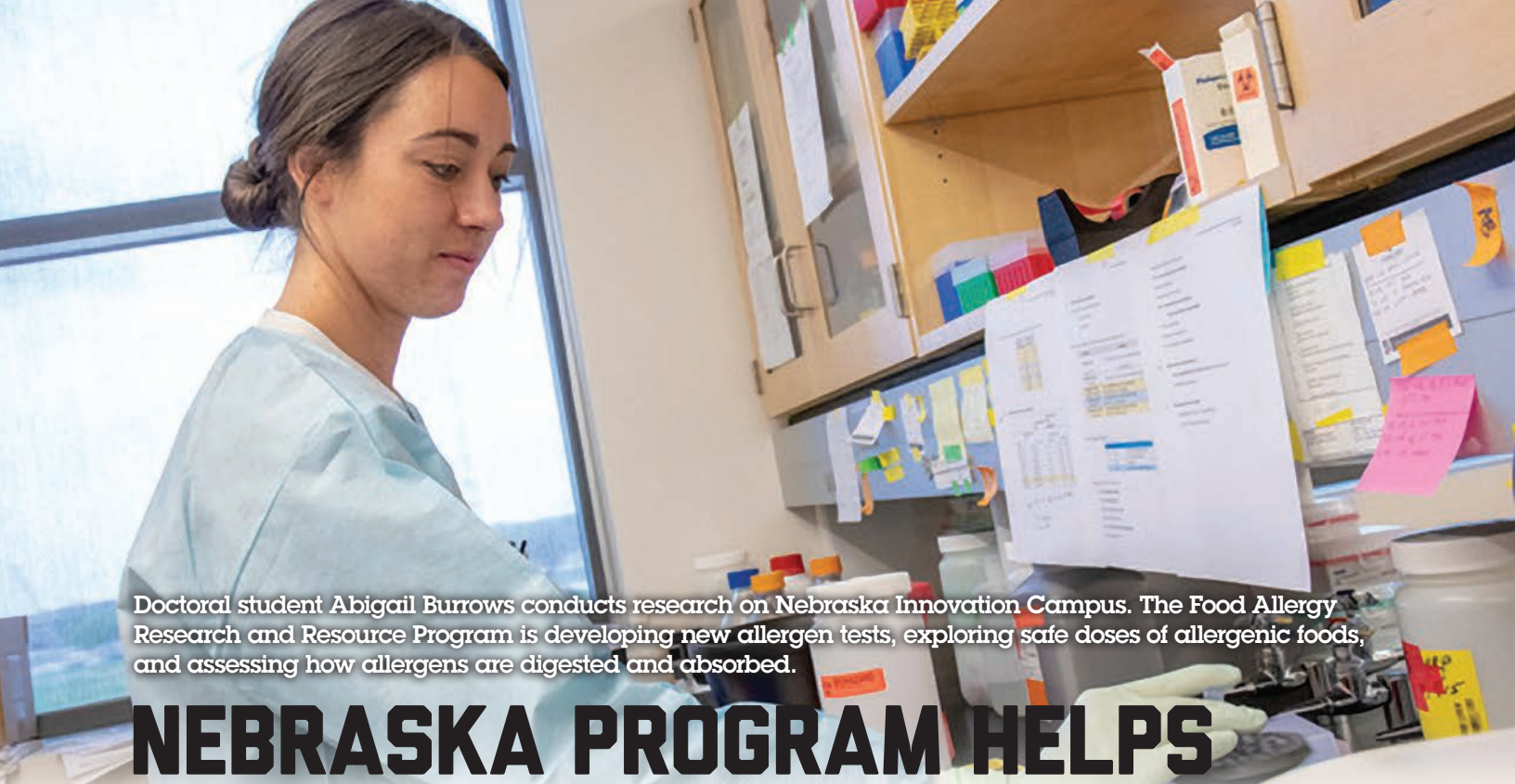
Compact partners aim to boost workforce development solutions for agriculture and natural resources industries in the region through several strategies, which include an external labor market demand analysis for the agriculture and natural resources industries in northeast Nebraska.

Skills, programming, competencies and credentials offered by the partners will be aligned with the demand in the labor market. Additionally, compact institutions will partner with ongoing workforce development efforts in the region.

“This is about preparing the next generation of problem-solvers, innovators and leaders in resilient food, energy, water and societal systems,” Heng-Moss said.

“This is about preparing the next generation of problem-solvers, innovators and leaders in resilient food, energy, water and societal systems.”

– Tiffany Heng-Moss



Doctoral student Abigail Burrows conducts research on Nebraska Innovation Campus. The Food Allergy Research and Resource Program is developing new allergen tests, exploring safe doses of allergenic foods, and assessing how allergens are digested and absorbed.

NEBRASKA PROGRAM HELPS GUARD AGAINST FOOD ALLERGENS

By: Alyssa Amen

When Nebraska's Steve Taylor founded the Food Allergy Research and Resource Program (FARRP) nearly 25 years ago—with the support of seven companies—he couldn't have anticipated what came next.

"We started (the program) just as food allergy awareness started to explode among the food industry, consumers and public-health agencies," said Taylor, professor emeritus of food science and technology. "We realized that no single food company could afford to develop all the tools and research to meet these needs, but perhaps a consortium of companies, working together, could do it."

The program's early research included a method to detect peanut residue. Through an industry partnership with Neogen Corporation, a company that develops solutions for food and animal safety, that method became a product: the first commercially available food-allergen test kit.

"We saw an opportunity to combine (the program's) capabilities in antibodies with our chemical conjugations, and put together a good program. It's been a strong relationship," said Jim Herbert, founder and chairman of Neogen Corporation, which developed and manufactured the kits.

The kits are now widely used to help companies detect undeclared traces of food allergens—including peanut, milk, egg, almond, hazelnut, coconut, soybean, sesame and shrimp—in food processing facilities.

"We generated the entire market category for allergen test kits," Taylor said. "With the test kits, scientific expertise and testing facilities, (our program) became the go-to place for industry."

Today, FARRP is an industry consortium with an international reputation for its food-allergen research expertise and outreach. One hundred food-processing companies support the program and help fund its operations, including 25 staff members and several graduate students.

In return, the companies have access to the latest food-allergen information, including FARRP's food-allergy database and staff consultations. Companies also submit food and ingredient samples, as well as equipment swabs, for quantitative analysis and receive confidential results about the presence of potential allergens.

Using commercial test kits, FARRP processes 50,000 samples annually at its facilities on Nebraska Innovation Campus. Many of the test kits are still produced by Neogen Corporation, the result of a 22-year university partnership. NUtech Ventures, the university's technology commercialization affiliate, continues to work with Neogen to license the university's food science research.

Neogen is also among FARRP's member companies, which all have a seat on its board of directors. They gather twice a year to learn about the program's latest research and share common interests.

related to food allergens. According to Taylor, it's a collaborative space because everyone is working toward the same goal: preventing consumer illness.

Company interactions help shape FARRP's applied research, which often involves undergraduate and graduate students working on solutions directly related to industry.

Faculty and doctoral students conduct independent research on topics that include developing the next generation of allergen-test methodology, exploring safe doses of allergenic foods and assessing how allergens are digested and absorbed.

"We get really positive feedback from our company members," said Taylor. "With an industry-funded consortium, the most important thing to do is to sit and listen, because you'll learn the research gaps. Someone will ask a question that you can't answer."

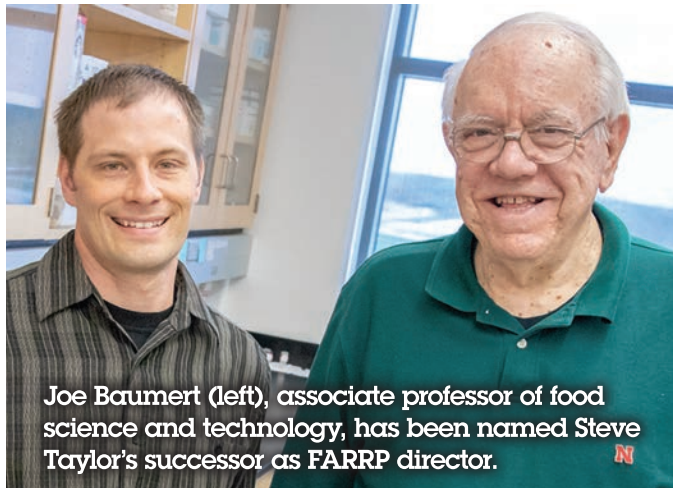
The program also prioritizes outreach to companies, consumer groups and government agencies, regularly hosting training for the food-manufacturing industry in the United States. It's also developed relationships with policymakers and public-health agencies around the world. A partnership with Canada's national public-health department has resulted in an international

conference, the Workshop on Food Allergen Methodologies, that is now in its 17th year.

The program's positive reputation and connections have also led to distinctive opportunities for students, Taylor said. Former students are employed at a prominent think tank in the Netherlands, a

research university in Germany, the Food and Drug Administration in Washington, D.C., and a startup company spun out of Stanford University.

Student outcomes, industry and policy outreach, research and technology commercialization all align with FARRP's larger purpose: consumer safety. To sustain it, Taylor has focused on building a program that will continue after his 2019 retirement. Joe



Joe Baumert (left), associate professor of food science and technology, has been named Steve Taylor's successor as FARRP director.

Baumert, associate professor of food science and technology, has already been named Taylor's successor as FARRP director. "I'm really proud of FARRP's impact," Taylor said. "The food industry is doing a much better job in allergen control and labeling. There's still more work to be done, but we've made a difference."



Faculty and graduate students from the Food Allergy Research and Resource Program include (from left) Melanie Downs, Shimin Chen, Bini Ramachandran, Steve Taylor, Joe Baumert, Abigail Burrows, Wanying Cao and Lee Palmer.

CAREER award helps Yin develop tools to find key enzymes

By: Gillian Klucas

With entire genomes available for study, finding specific genes of interest is challenging. University of Nebraska-Lincoln's Yanbin Yin, a bioinformatics specialist, is creating advanced computational tools to quickly identify a class of enzymes found in all living organisms.

Yin's tools are aiding research, including his own, into human gut health, biofuel production, crop diseases and our evolutionary past.

"If you sequence a plant or bacterial genome, there are probably tens of thousands of genes. But just 5% of those genes are these enzymes," said Yin, associate professor of food science and technology. "If you do experiments, it could take 20 or 30 years to figure it out. With this software system, you can do it in five minutes."

Yin and his team focus on carbohydrate-active enzymes, or CAZymes, the enzymes that produce, modify and break down all carbohydrates. He's building on his earlier work that identifies CAZymes within genetic code researchers upload to a website. It has proven popular, receiving 50 to 60 uploads a day, Yin said.

Now, he's advancing his software to analyze and classify CAZymes at a more detailed level. The software looks for key features within genetic code to distinguish among different CAZyme groups and predict how the enzymes function.

Yin is creating computer algorithms that learn and improve as data is added. His starting point is a CAZyme database compiled from the scientific literature and maintained by other researchers. He's using the existing database

to train his identification software and will package the software into a free, user-friendly website for CAZyme researchers.

"Our contribution is to have a software system that can learn from those training datasets and make predictions," Yin said. The software will give researchers the ability to better understand the CAZymes they're investigating.



Because CAZymes provide critical functions in nature, the tools will speed research across a wide variety of disciplines. Bioenergy researchers are investigating microbial CAZymes that break down complex carbohydrates into simple sugars, which can be converted into biofuels. Harnessing this ability would allow biofuel production from agricultural waste.

Plant pathologists are interested in the CAZymes that pathogens use to break through plant cell walls, causing disease.

Yin's team is using the software to identify and investigate the CAZymes of beneficial bacteria living in the gut. The bacterial enzymes break down indigestible fibrous food into sugars the host

can use. His research could lead to improved human and animal health.

The team is also looking deep into the past to better understand how plants migrated out of the water in a critical, early evolutionary process. He's studying the CAZymes of an alga, *Zygnema circumcarinatum*, to investigate how early algae-like plants altered the carbohydrate

chemistry of their plant cell walls to protect against the harsher conditions of living on land. Yin leads an international *Zygnema circumcarinatum* genome sequencing consortium with collaborators from UNL and institutions in Austria and Germany.

Yin's projects are funded with \$911,000 from the National Science Foundation's Faculty Early Career Development Program, the prestigious award given to outstanding pre-tenure faculty. Yin received his CAREER award

as a faculty member at Northern Illinois University and is continuing this work as a researcher in the Nebraska Food for Health Center at the University of Nebraska.

The CAREER award allowed Yin to develop bioinformatics workshops for preservice high school teachers and to recruit undergraduates, including underrepresented students, to work in his lab in Illinois and explore bioinformatics research. He plans to continue his outreach and recruiting efforts at Nebraska through opportunities with the Undergraduate Creative Activities and Research Experience program, known as UCARE, and the Center for Science, Mathematics and Computer Education.



By the Numbers

24 Rural Nebraskans are more optimistic about their current and future situation than they have been in the 24-year history of the Nebraska Rural Poll, according to 2019 results.

36 The Nebraska Center for the Prevention of Obesity Diseases has generated nearly \$100 million in external funding, about \$36 for every dollar the university invested.

45 Milkweed in the Classroom is a Department of Entomology-led pilot program engaging 45 schools across Nebraska in growing milkweed plants in the classroom in an effort to save monarch butterflies.

150 Agronomy and horticulture students planted 150 trees on East Campus in October in honor of the university's sesquicentennial.

462 According to the Fall 2019 census taken on the sixth day of classes, there are 462 new students from Nebraska in CASNR, an increase of 10.3% compared to last year.

800+ Data from over 800 on-farm research studies dating back to 1990 is available to review using the Nebraska On-Farm Research Network's results finder tool at resultsfinder.unl.edu.



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