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INSTITUTE OF AGRICULTURE AND NATURAL RESOURCES

CONTENTS

03 L	etter from	IANR Vice	Chancel	lor Mike B	oehm
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O4 University of Nebraska-Lincoln doubles down on commitment to rural communities

A new IANR initiative increases UNL support to rural communities.

- O8 Rural Fellows: Making an impact on rural communities since 2013

 Nebraska college students who serve as Rural Fellows receive as much as they give through a unique service-learning program.
- The Rural Poll: Giving a voice to rural Nebraskans for 25 years
 For a quarter century, the Nebraska Rural Poll has given rural Nebraskans a voice in statewide issues.
- 12 Thriving Index gives rural communities another tool to gauge economic success

A new tool gives community leaders a snapshot of how their regions are performing relative to their peers.

- 14 CASNR, CEHS graduates bolstering rural Nebraska economies
 These UNL graduates are putting down roots in their own hometowns.
- 18 Angler surveys lead to better understanding of why people fish, better amenities for anglers

Through a decade-long survey, UNL researchers are learning how anglers use Nebraska's recreational lakes.

- Hops, hazelnuts and hemp: Producers, UNL researchers test new crops
 UNL researchers work to understand the potential for niche crops in Nebraska.
- Report: Agriculture critical to Nebraska economy, state's resilience

 Economic impact study links Nebraska's formidable agriculture industry to state's resilience.
- 24 Nebraska MEP drives manufacturing improvements

 The Nebraska Manufacturing Extension Partnership supports an important Nebraska industry.
- 26 Rural businesses team up with youth to boost economic vitality

 Youth Entrepreneurship Clinics give young people the tools to address challenges in their own communities.

Growing A Healthy Future is published twice a year by the University of Nebraska-Lincoln under the auspices of the University of Nebraska Vice President and Harlan Vice Chancellor of the Institute of Agriculture and Natural Resources.

Each issue describes IANR programs that benefit Nebraska and beyond. If you happen to receive more than one copy, please share with a friend.

Upon request, this publication can be made available in an alternative format for people with disabilities. For assistance, call 402-472-2871.

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Editorial

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Last August, I drove to Scottsbluff for a meeting of the Nebraska Corn Board. This meeting marked the first time the Nebraska Corn Board had met as far west as Scottsbluff; it also marked the first time I had driven across the state since March, when COVID-19 paused normal operations across the University of Nebraska-Lincoln, our state, our nation and our world.

On that drive, I noticed, as I always do, the shift of the landscape over the 398 miles between Lincoln and Scottsbluff; the change in elevation, ecology and land use from east to west, which makes Nebraska such an ideal place for agriculture production, research and innovation. I got a burger from my favorite spot in Bridgeport, which reminded me of something I noticed immediately when I moved to Nebraska four years ago and have come to appreciate more and more since—the strength and spirit of our state's rural communities.

Nationally, 2020 was defined by a global pandemic, racial tensions not seen since the 1960s, and an increasingly divided public. All of these have been acutely felt in Nebraska. But we've also seen Nebraskans come together, roll up their sleeves and keep our state moving forward, just as they did after the flooding, bomb cyclone, and irrigation tunnel collapse of 2019, and after countless hard times before that. This is an attitude reflected in the findings of the 2020 Nebraska Rural Poll, in which a majority of rural Nebraskans reported that they believe their communities are resilient, and that they can count on their neighbors to help one another through difficult times.

Within the UNL's Institute of Agriculture and Natural Resources, researchers across the state found ways to keep their experiments moving forward. Our students in the College of Agricultural Sciences and Natural Resources left campus in March and finished the semester remotely; I heard from many students that their parents were glad to have them home to help with calving and planting in between college projects and exams. Nebraska Extension continued its outreach to producers, families and individuals, adapting both their programming and delivery methods to meet the challenges of this unique time in history. And most importantly, Nebraska's farmers, ranchers and meat-packing workers continued to grow and process the food that feeds Nebraska, America and the world.

Ted Carter became the new president of the University of Nebraska in 2020, and it is clear that the values agriculture and understands its importance to our state. When he unveiled his five-year strategy

in August, he identified five areas in which, through partnerships, NU is poised to become a worldwide leader. Those areas include both water and food security and rural community vitality, along with infectious disease, national and cyber security, and early childhood education. Later in 2020, UNL announced eight grand challenges it would strive to address through research. Those challenges include sustainable food and water security; climate resilience; community and economic vitality; early childhood education and development; health equity; anti-racism and racial equity; quantum science and engineering; and science, engineering, and technology for society. IANR is already engaged in meaningful research, teaching and extension in all of these areas.

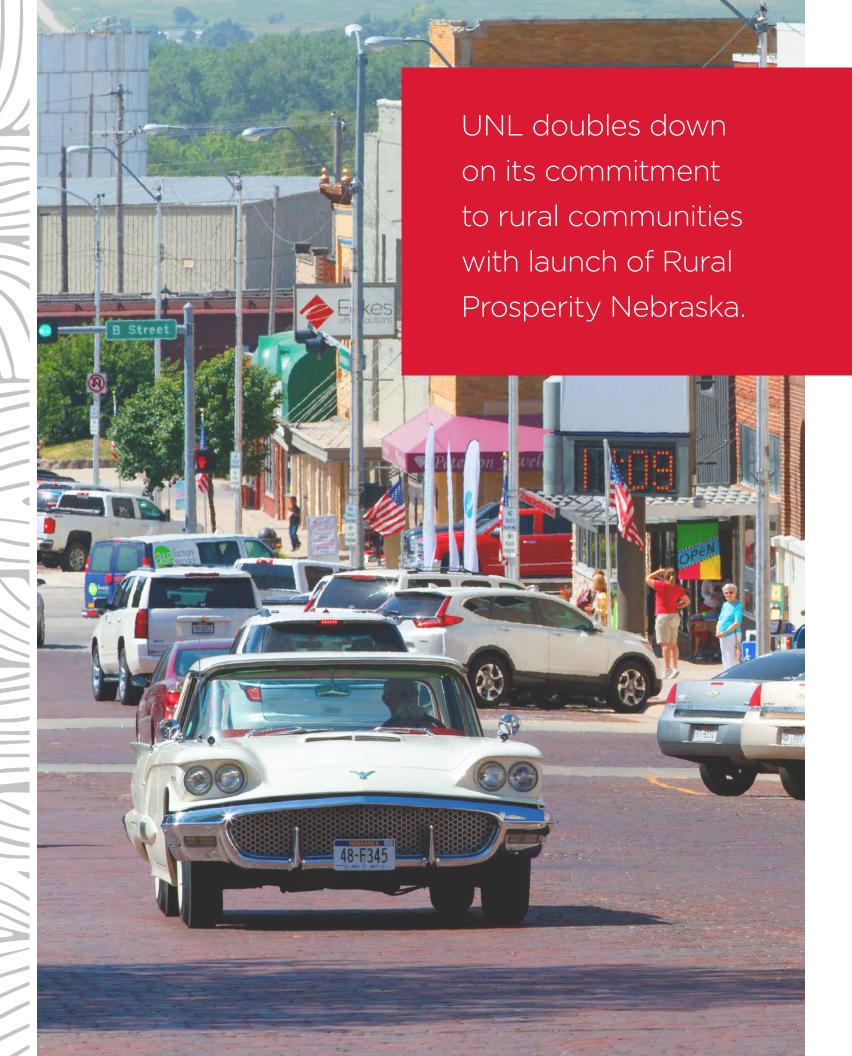
The inclusion in rural economic vitality in both Ted Carter's strategic plan and UNL's grand challenges underscores that our university leadership understands that the success of rural communities is foundational to the strength of our state as a whole. This year, IANR launched Rural Prosperity Nebraska, which brings together researchers, Nebraska Extension professionals and students to work with rural leaders across the state to strengthen our rural villages, towns and cities. Through this new effort, we are expanding our popular Rural Fellows program, which places 20-30 student interns each summer in rural communities across the state, to up to 200 students in up to 100 communities in 2021.

Our rural communities help make our state the unique, resilient, wonderful place that it is. They are the birthplace of innovation and the home of Husker grit. I am proud to work for a university that recognizes this, and to live in a place where people look out for one another and help when times get tough.

Michael J. Boehm, Ph.D. Vice President, Agriculture and Natural Resources University of Nebraska

IANR Harlan Vice Chancellor, University of Nebraska-Lincoln









UNIVERSITY OF NEBRASKA-LINCOLN DOUBLES DOWN ON COMMITMENT TO RURAL COMMUNITIES

By: Cara Pesek

In Valentine, community leaders recognized it was time to refresh their Main Street corridor, which had been largely the same since the 1930s. They solicited plans for a more inviting and pedestrian-friendly Main Street, and also developed a community survey and local leadership development opportunities.

In Stratton, after new owners of the local grocery store found success in selling homemade specialty items, including sushi and curries, they looked to expand their business and found success in selling pre-packaged versions of their specialty dishes in nearby communities, too.

In Ravenna, after successfully hosting 8,000 visitors from around the world during the 2017 solar eclipse, community members began thinking about what they could do to attract not just visitors, but new residents—specifically young families and active retirees—to put down roots.

In these communities, and in many others all across the state, local leaders worked with the University of Nebraska—specifically with Nebraska Extension's Community Vitality Initiative and with the University of Nebraska's Rural Futures Institute—to make these and other important projects happen.

"We felt like the University was doing everything possible to help us," said Dana Dennison, Ravenna's economic development director at that time. UNL faculty worked with community leaders to identify goals—in Ravenna's case, those included increasing community engagement and improving recreation opportunities, housing options and business culture—and assisting with establishing a map to reach them.

The Rural Futures Institute was launched in 2012 to facilitate scholarship in service to the success of rural people, leaders and communities. The Community Vitality Initiative, which was developed around the same time, placed Extension professionals in communities across the state to help address issues important to rural communities, including business development, entrepreneurship, retention of current residents and attraction of new ones.

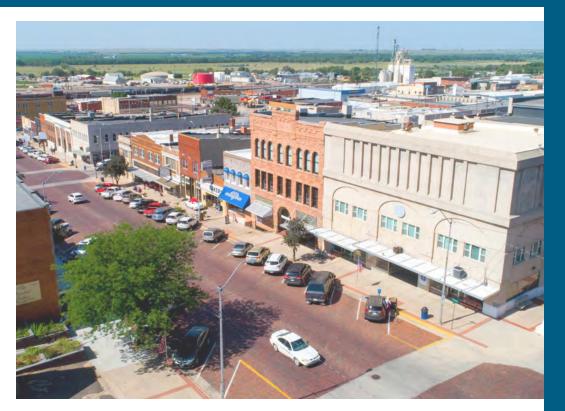
In 2020, the University of Nebraska-Lincoln united these two entities to form Rural Prosperity Nebraska, which is housed in UNL's Institute of Agriculture and Natural Resources.

"With the launch of Rural Prosperity Nebraska, we are doubling down on our commitment to rural community development and prosperity," said

Continued onto next page...

"Extension is the most effective when our educators and specialists work closely and co-create solutions with local leaders."

Dave Varner,
 Nebraska Extension interim dean and director



In his strategic plan for the University of Nebraska System, President Ted Carter named rural economic prosperity as one of five areas in which, through partnerships, NU is poised to become a worldwide leader.

Mike Boehm, NU vice president for agriculture and natural resources and IANR Harlan Vice Chancellor at Nebraska. "Both NU's Rural Futures Institute and Nebraska Extension's Community Vitality Initiative made big impacts, and this shift should allow us to be a more effective and better partner by uniting the best we have to offer under the Rural Prosperity Nebraska umbrella."

Merging these two programs will allow NU to be more strategic, focused and holistic in engaging with Nebraska's rural community leaders to advance their communities in ways that are important to them, Boehm said. Some areas of particular importance include attracting and retaining young families, developing the next generation of leaders, supporting businesses and entrepreneurs, and ensuring they have the infrastructure and services needed to grow and thrive.

The launch of the program followed NU President Ted Carter's announcement, in August of 2020, of rural community development and vitality as one of five areas of strength where NU is well positioned to be a world leader. Later in 2020, UNL announced community and economic vitality as one of eight grand challenges that the university would strive to address through research, teaching and extension.

This sends a clear message to the state's rural communities, Boehm said.

"University of Nebraska leadership understands that the success of our rural areas is critical to the success of our state as a whole," Boehm said. "It is critical that rural communities have strong economies and that the people who live there have access to services, such as local health care, as well as robust work and educational opportunities."

The Rural Futures Institute's Fellows program, in which college students from across Nebraska complete 10-week service-learning projects in communities throughout the state each summer, will be retained and expanded under Rural Prosperity Nebraska. So, too, will the Thriving Index, an economic and quality-of-life benchmarking tool that allows rural regions of

Nebraska to see how they compare to similar regions across the state and the upper Midwest. The Rural Poll, which for the past 25 years has provided a platform for the state's rural residents to share their thoughts and opinions on important statewide issues, also will be part of the new program.

Under Rural Prosperity Nebraska, Extension educators dedicated to rural community prosperity and success across the state will focus their work in six areas: entrepreneurship and economic diversification; placemaking; people attraction and retention; leadership and community capacity building; regional food systems; and community engagement and accountability.

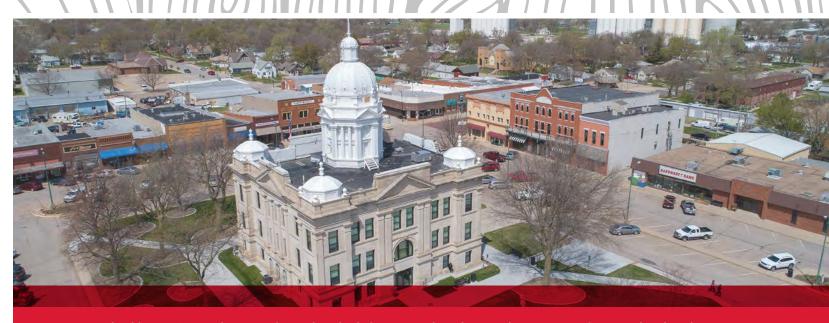
Growing existing relationships and building new partnerships with local, regional and state leaders will be key to Extension's success in these areas, said Dave Varner, interim dean and director of Nebraska Extension.

"Extension is most effective when our educators and specialists work closely and co-create solutions with local leaders," Varner said. "The best ideas to improve rural communities always come from the people who live there. Extension can help facilitate robust conversations that spark innovation, then connect rural residents with grants, trainings and other resources that help get the job done."

Cheryl Burkhart-Kriesel, an Extension professor based in Scottsbluff, will lead the Extension team working in the six focus areas. Burkhart-Kriesel has more than 30 years' experience in higher education, Extension and community development, and she's excited to put those skills to work.

"Supporting communities where they are—to help them be their best—is absolutely critical for the future success of both rural and urban areas of our state," Burkhart-Kriesel said. "As a university, we can drive success by connecting students to community issues, by using our research skills to help better understand ourselves and our changing environments, and in countless other ways."

Learn more at: ruralprosperityne.unl.edu.



Launched in 2020, Rural Prosperity Nebraska brings together the Rural Futures Institute and Nebraska Extension's Community Vitality Initiative to help the state's rural communities thrive.

RURAL FELLOWS: MAKING AN IMPACT ON RURAL COMMUNITIES SINCE 2013

By: Cory Matteson

Since 2013, students from the University of Nebraska-Lincoln and colleges throughout Nebraska have spent 10 weeks over a summer working with leaders in rural areas on community-developed projects. These projects are often focused on economic and business development, entrepreneurship, early childhood development, marketing and promotion, and other areas critical to the sustained success of rural communities.

These students are known as the Rural Fellows, and they're making a big impact in the communities they serve. On average, their work results in a \$28,000 economic impact per community.

The Rural Fellows program connects UNL students to community leaders all across Nebraska, and vice versa. The payoff for both communities and students is huge, said program coordinator Helen Fagan.

"The Rural Fellows program, through the student interns, connects the research of UNL faculty to rural Nebraska communities," Fagan said. "At the same time, the program gives participating students a close-up view of the leadership and innovation taking place in rural communities across the state, as well as deep, personal ties across Nebraska."

Up to 200 students and 100 communities will be accepted into the 2021 program—a more than tenfold increase from 2020. The increase in capacity can be attributed in part to a new partnership with the Nebraska Community Foundation (NCF), which launched its own Hometown Internship program in 2020, affording Nebraska college students the opportunity to return to their hometowns for a summer of service-learning. Ultimately, an enriching summer experience in their Nebraska communities could encourage young Nebraskans to return after



Working in areas such as economic and business development, entrepreneurship and marketing, Rural Fellows on average have a \$28,000 economic impact on the communities they serve.



Connecting students to **opportunities** in their hometowns and other **rural communities** is critical to Nebraska's people-attraction efforts.

- Jeff Yost

77

college, said Jeff Yost, president and CEO of the Nebraska Community Foundation.

"Connecting students to opportunities in their hometowns and other rural communities is critical to Nebraska's people-attraction efforts," Yost said. "Inviting bright, ambitious young people to our Greater Nebraska communities helps ensure that bright, ambitious young people opt to remain in our places, and creates a more prosperous future for the community at large. We will continue our Hometown Internship efforts within the NCF network in the summer of 2021 and appreciate the University of Nebraska promoting all of these internship opportunities to Nebraska students."

Ethan Weiche, a senior architecture student at UNL and a 2020 Rural Fellow in Ravenna, said the experience opened him up to career paths he hadn't even considered.

Weiche worked on several projects during his 10 weeks there last summer, including developing marketing and fundraising materials for expansion of the community's hike-bike trail. He also wrote grants for the local historical society, which he found particularly fulfilling and impactful.

"This experience really exposed me to grant writing as a potential career," he said.

Weiche said the experience also helped him grow his leadership skills, particularly the value of seeking input from community members with opinions that differed from his own.

"Reaching out to hear these voices makes us consider things that we hadn't considered before, therefore making the project that much stronger," he said.

Another 2020 student fellow, junior agricultural and environmental sciences communication major Rachel Williss, spent the summer in Pawnee County, where she photographed local tourism destinations, created a photo library and developed social media accounts the Pawnee County Promotional Network could use to drive tourism.

"What we've given Pawnee County is a starting point in developing their brand as a tourism destination," she said.

The Rural Fellows program is part of Rural Prosperity Nebraska, a new initiative dedicated to the success of rural communities across the state that Nebraska's Institute of Agriculture and Natural Resources launched earlier this year. Rural Prosperity Nebraska brings together Nebraska Extension educators, students, faculty, partner organizations and community leaders from across the state to address rural challenges and identify opportunities for growth.

Students accepted into the program are matched with projects that relate to their individual interests and field of study. Students work in pairs. Housing and a stipend are provided. For more information on the program, visit ruralprosperityne.unl.edu/rural-fellows.

THE RURAL POLL: GIVING A VOICE TO RURAL NEBRASKANS FOR 25 YEARS

By: Cara Pesek

In the spring of 2020, the Rural Poll arrived in 7,000 mailboxes of rural Nebraskans across the state, as it has each year since 1996.

Last year was special—2020 marked the 25th anniversary of the Rural Poll, which has given rural Nebraskans an annual platform to voice their opinions and concerns on wide-ranging and important topics including agricultural policy, energy, the environment, climate change, government, crime, education, health care, housing, immigration, taxes, community development strategies, technology and work, among others.

"Rural people haven't always felt they have much of a voice," said Becky Vogt, manager of survey research for University of Nebraska-Lincoln Department of Agricultural Economics. "Nebraska's urban population can sometimes overshadow the rest of the state."

The poll was first conducted under the leadership of Dr. John Allen and Dr. Sam Cordes. Vogt, who was a student at UNL then, began managing the poll in its second year in 1997, and has been with it ever since.

Over the first 25 years of the poll, some trends have emerged. For example, rural Nebraskans' satisfaction with services such as medical and nursing home care, mental health services and access to senior centers, has generally declined across all years of the study. In addition, satisfaction with entertainment, retail shopping and restaurants has generally declined over the past 20 years.

At the same time, the optimism of rural Nebraskans has been building. Each year the proportion of rural Nebraskans who say they are better off than they were five years ago has been greater than the proportion saying they are worse off than they were five years ago, with around 45 percent reporting they were better off and 19 percent reporting they were worse off. During the past six years, the gap between the two groups has widened.

Rural residents are also increasingly positive

about the future. The proportion saying they will be better off 10 years from now has always been greater than the proportion saying they will be worse off 10 years from now, and the gap between the two groups has gradually widened since 2013.

The 2020 poll was mailed just after the COVID-19 pandemic shut down many schools and workplaces across Nebraska and disrupted agriculture and other industries. Most rural Nebraskans who responded to the poll (89%) agreed that infectious diseases will have a major impact in the country in the next few years. And most rural Nebraskans assumed there will be limits on what federal and local governments can do to contain a widespread infectious disease outbreak.

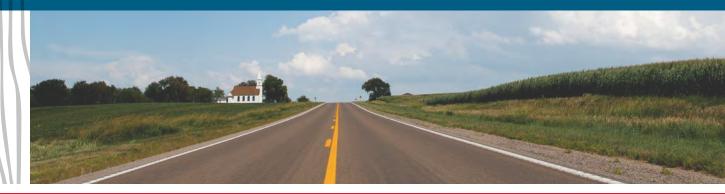
Most respondents also indicated that their community was willing to work together to overcome a setback, and that, for the most part, their neighbors were willing to help one another out.

Each year, findings from the Rural Poll are distributed in a series of reports crafted by Vogt and a team of faculty from the University. In 2020, reports focused on the impact of severe weather, resilience, well-being, and the impact of the state's agricultural industry. This data is used widely by economic development groups; local, state and federal lawmakers; and nonprofits, among others. Findings from the poll are regularly lifted up in local and state media, but national outlets, including the New York Times and National Public Radio, have also cited the poll over the years.

Other states, including Mississippi, Texas, South Dakota and Ohio, have modeled survey efforts after the poll, and academic researchers have incorporated poll data into examinations of community satisfaction, migration intentions, residential preferences, and other topics.

"The Nebraska Rural Poll started out over 25 years ago as a research tool," Vogt said. "Today its reach goes well beyond that."

One of the findings of the 2020 poll was that rural Nebraskans believe both themselves and their communities to be resilient.



RURAL POLL: NEBRASKA COMMUNITIES SHOW CHARACTERISTICS OF RESILIENCE

By: Becky Vogt

Most rural Nebraskans believe their community exemplifies characteristics of resilience, according to the 2020 Nebraska Rural Poll.

More than six in 10 Nebraskans who responded to the Rural Poll, which was sent to 7,000 rural households across the state in April 2020, said they agreed or strongly agreed with the following statements: People in my community help each other (82%); I believe in the ability of my community to overcome an emergency situation (76%); people in my community work together to improve the community (69%); I can depend on people in my community to come to my assistance in a crisis (68%); my community keeps people informed about issues that are relevant to them (65%); and there is trust among the residents of my community (63%).

However, rural Nebraskans were less likely to say their community treats everyone fairly, actively plans for disasters, trusts public officials, or looks at its successes and failures to learn from the past, according to Becky Vogt, survey research manager for the Rural Poll.

Community size played a role in some of these perceptions. Residents of larger communities were more likely to agree that their community looks at its successes and failures to learn from the past, keeps people informed about relevant

issues, actively prepares for disasters, and trusts local leaders to respond to emergency situations. Those living in or near mid-sized communities (populations ranging from 500 to 9,999) were most likely to say their community has priorities and sets goals for the future.

Meanwhile, residents of smaller communities were more likely to report that they knew how to help solve major community problems.

Just over half of those living in or near the smallest communities (populations under 500) agreed that they knew how to help solve major problems, compared to 37% of those living in or near communities with populations of 5,000 to 9.999.

These findings suggest that although larger communities appear to have more formal planning for emergencies, residents of smaller communities remain more confident of their ability to handle challenges, according to Brad Lubben, Extension associate professor and policy specialist at the University of Nebraska-Lincoln.

"While residents of the smallest communities lack existing plans, services or infrastructure of larger communities, they are ready to get the job done when something happens," Lubben said.

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THRIVING INDEX GIVES RURAL COMMUNITIES ANOTHER TOOL TO GAUGE ECONOMIC SUCCESS

By: Eric Thompson

The Nebraska Thriving Index is a benchmarking tool that compares Nebraska regions with their peers around the upper Midwest on 47 measures of economic performance and conditions. First developed in 2019 by a team of social scientists from the University of Nebraska–Lincoln and University of Nebraska at Kearney (UNK), the index utilizes data from a variety of sources from recent years and strives to provide rural residents and decision-makers with information for economic development and policy analysis.

Just as importantly, it aims to help rural regions answer a basic question: "How is our economy doing?"

The Nebraska Thriving Index indicated that in 2020, most rural regions of Nebraska were doing quite well, particularly when it comes to quality of life. However, Nebraska's rural regions faced challenges in areas including education attainment, cost-competitiveness and infrastructure. The 2020 index also found that the Tri-Cities (Kearney, Grand Island, Hastings) and North 81 (Columbus and Norfolk) regions are the top-performing rural regions in Nebraska.

Other results varied by region, said Eric Thompson, Nelson Professor of Economics at the University of Nebraska-Lincoln, and one of the developers of the Index. Even so, several trends emerged.

Nebraska regions generally lead their peers in measures of quality of life, such as commute times, crime rates and health care access. They tend to lag behind their peers in education and skill, as well as key aspects of economic competitiveness such as infrastructure and cost of doing business.

"Rural and small metropolitan Nebraska should continue to focus on increasing education attainment and economic competitiveness," Thompson said. The index also indicates that Nebraska's smaller metropolitan areas are doing particularly well. Regions that included small cities like Norfolk, Kearney and Hastings clearly led their peers in terms of economic prosperity and conditions.

"Compared to similarly situated regions in the upper Midwest, Nebraska's micropolitan and small metropolitan regions are doing well," said Bree Dority, associate professor of finance at UNK. "In addition to performing well on quality-of-life indicators, these regions also rank ahead of their peers when it comes to growth in households with children, growth in total employment, and in business and entrepreneurial activity."

The Panhandle and Siouxland (Dakota and Dixon counties) regions lagged their peers. In addition to competitiveness and education, economic and demographic growth were key challenges for the Panhandle. The Siouxland region also struggled with economic diversity, opportunity and stability. Other regions of Nebraska, including the Sandhills, scored near their peer average.

The Nebraska Thriving Index explores key measures of economic prosperity, such as economic growth, opportunity, diversity and stability, as well as key measures of economic conditions, such as demographic growth, education, cost of doing business, infrastructure, quality of life and social capital. Detailed findings from the 2020 Nebraska Thriving Index, based on data from before the onset of the COVID-19 pandemic, are available at ruralprosperityne.unl. edu/thriving-index.

The research team for the 2020 Nebraska
Thriving Index included Eric Thompson and
Mitch Herian of Nebraska's Bureau of Business
Research and Bree Dority of UNK's College of
Business and Technology. The Thriving Index is
supported by Rural Prosperity Nebraska.

CASNR, CEHS GRADUATES BOLSTERING RURAL NEBRASKA ECONOMIES BY: Natalie Jones

Students from all across the state, country and world come to Nebraska to attend UNL's College of Agricultural Sciences and Natural Resources (CASNR) and College of Education and Human who graduate from these two colleges return to their hometowns, taking with them the skills, connections and community focus they honed during college.

Some return to the family farm or ranch. Many others start their own businesses, become teachers, or work in other jobs, which often are tied to the state's vast agricultural economy. In Nebraska, one in four jobs is tied to agriculture and natural resources, and CASNR and CEHS alumni are making a difference both in their industries and in their communities all across the state. The alumni profiled below are just a small sampling of recent alumni making a mark on their hometowns.



AARON LAPOINTE. general manager, **Ho-Chunk Farms**

After graduating from the University of Nebraska-Lincoln's College of Agricultural Sciences and Natural Resources with a degree in mechanized systems management, Aaron LaPointe went home.

LaPointe, a member of the Winnebago tribe, returned to the Nebraska community of Winnebago. There, he manages a wide variety of conventional and organic crops grown for Sciences (CEHS). Each year, a number of students Ho-Chunk Farms, a tribally-owned corporate farm that aims to create new economic opportunities for tribal members.

> "It is so important to go back to your community and make a positive impact, using the knowledge and skills you've gained through CASNR," he said.

> LaPointe didn't grow up on a farm; he got his start working for Ho-Chunk in 2015 as an environmental intern. But he quickly took to farming, and now serves as Ho Chunk's general manager. In this role, he plans planting projects, which local farmers then plant, manage and ultimately harvest. He also works to develop entrepreneurial opportunities that he hopes will draw other young people back to Winnebago. For example, he organized the Indian Corn Project, in which students partnered with Winnebago elders to plant and harvest corn.

> LaPointe also played a large role in a gardening project that started in 2018. Ho-Chunk provides materials to encourage tribal members to begin growing their own gardens, which in turn encourages healthier eating. The initiative has morphed into a summer farmer's market called Village Market, open every Saturday. It offers fresh garden produce, Native American art and more. LaPointe enjoys seeing the younger generations experience agriculture, and positively impacting the community.

"Rural communities need professionals not only to keep them alive, but to thrive." LaPointe said. "Push forward, try new things and adapt to the opportunities that come."



EMILY EBERSPACHER SHOOK. entrepreneur, Triple E Equine, LLC

On a whim, fourth-generation farm girl and agribusiness major Emily Eberspacher decided to enroll in a hospitality class. In 2017, she graduated with a degree in the Hospitality, Restaurant and Tourism Management program through the College of Education and Human Sciences, with minors in animal science and the Engler Agribusiness Entrepreneurship Program.

During her time in the Engler program, Eberspacher launched Triple E Equine, LLC, a horse motel and facility on her family farm near Beaver Crossing, Neb. After college, she and her family worked to grow the new business, which gave Eberspacher an opportunity to use all aspects of her University of Nebraska-Lincoln education.

"We've boarded horses from friends and locals and helped sell horses. It wasn't like we were creating a new business for ourselves, we were just using what we already do and crafting that into a business," Eberspacher says.

Eberspacher has worked with horses her entire life. She and her younger twin sisters Hanah and Sarah showed horses across the country when they were growing up. Over the years, her family's horse herd grew, along with their facilities, until an F3 tornado devastated the farm property and horse facilities.

The Eberspacher family slowly rebuilt an indoor area and heated horse barn. They added a bunkhouse with views into the arena, complete with a full kitchen and bedrooms, thinking family and friends might sometimes come and visit.

Using what Eberspacher learned through her major and both minors, she and her family began to offer the hospitality they were already extending to family and friends to the general public.

The Eberspacher family works together to connect their customers to businesses in nearby communities such as the local café, repair shop and hardware store. They sell merchandise from local vendors including handmade animal paintings and goat soaps.

"I really think our business has put our community and our county on the map, honestly. A lot of people didn't know Beaver Crossing existed, let alone everything it has to offer," she

Eventually, Eberspacher has her sights set on expanding to a second location in the north central part of the state, where she now lives with her husband.

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ERIC AND
SARAH
POST,
veterinarians,
Lothrop
Animal Clinic

Eric and Sarah Post met as undergraduates in CASNR's Pre-Vet Club and the rest is history.

They began dating and both enrolled in the veterinary medicine program at the University of Nebraska-Lincoln (UNL). In this program, students spent the first two years of vet school at UNL, then completed their studies at Iowa State University.

After graduation, Eric and Sarah decided to move back to Sarah's hometown of Crete, Neb., to join her father Gary in the family practice, Lothrop Animal Clinic.

The practice serves about 45 communities surrounding Crete. Eric focuses on the large animals and goes to farm calls, while Sarah cares for small animals at their clinic.

"I really enjoy being in the animal health and agriculture industry, and I just feel lucky that both of us get to work in that every day," Sarah said.

The Posts strive to fill the shoes of Sarah's father, who has been a community leader for 30 years. Eric has joined the board of directors for the Crete Chamber of Commerce and both of them hope to continue to support locally-owned and operated businesses like theirs.

"I've always thought of the vet in town as being a very loyal, trusted person in the community, and I knew I could be that person someday," said Eric, who grew up in Syracuse, Neb. In the future, the Posts look to expand the clinic services, and to mentor young veterinarians who are just starting their careers. Maybe someday, those young vets will include their two children, Elliot and Kaycee.



HALEY
MILES,
entrepreneur,
Sandhills
Blue
Photography

Haley Miles always knew she wanted to move back to a rural Nebraska community, but wasn't sure if she'd ever have the opportunity. With hard work and a little faith, she forged a pathway for herself.

Growing up as the fifth generation on her family's farming and feedlot operation near Ainsworth, Neb., Miles joined her high school FFA chapter and set her sights on attending the College of Agricultural Sciences and Natural Resources at the University of Nebraska-Lincoln to study agricultural economics. She graduated as one of the first students to complete the Engler Agribusiness Entrepreneurship Program.

"Being a part of Engler, I always wanted to start something of my own, and I've always been super passionate about my own rural community," Miles

While in college, she interned with her local economic development office, which confirmed her dreams of moving back to a rural community to one day raise a family with the same agricultural traditions she grew up with.

"I wanted to build and structure something that would kind of set me up for my future, while still being able to be part of my family's operation," she said.

She moved back to her hometown in north central Nebraska and married her husband Mark Miles, where they farm and have a cattle operation. She began taking photos just for fun, and soon realized there was local need for a professional photographer. Photography, it turned out, was the career that her experience in the Engler program had prepared her for.

In 2017, her love for rural people blossomed into Sandhills Blue Photography. Miles specializes in wedding and engagement photography.

For Miles, capturing these milestones is a labor of love. She appreciates the creativity her job affords her, and she loves the opportunity to capture important moments for her friends and neighbors.

"Because I'm so passionate about rural communities, I feel like the best way to tell their stories is just to tell love stories of people who live there," she said.



KELSI WEHRMAN,
State
Coordinator,
Nebraska
Pheasants &
Quail Forever

Since 2007, Kesli Wehrman has served as the State Coordinator for Nebraska Pheasants Forever and Quail Forever. In this role, she oversees 26 wildlife biologists across the state and helps create wildlife programming and habitat, assists with fundraising and spurs interest in hunting. It's a dream job for the CASNR graduate, a former farm girl who majored in fisheries and wildlife management.

The Pathway for Wildlife and the Youth Mentored Hunt programs are among the most popular programs that Pheasants Forever and Quail Forever offer, Wehrman said. The Pathway for Wildlife program provides resources, such as pollinator seed mix, to communities that wish to create wildlife habitat on public or private land. The Youth Mentored Hunts pair experienced hunters with youth who have never hunted before or may not otherwise have the chance.

"We provide more wildlife habitat in rural communities, which creates more hunting opportunities so people will travel to rural places and stay in the local motel, dine at the local restaurant, and that sparks more economic income," Wehrman said.

The Youth Mentored Hunts have a big impact, too, she said. Around 70 percent of youth who take part in the Youth Mentored Hunts go on to purchase a hunting or fishing permit. In Nebraska, hunting, fishing, wildlife viewing and state parks visitation has a combined economic impact of \$2.64 billion annually.

It's an industry that Wehrman personally takes part in, too, as does her family: husband, Mike, and their children Camden, Carson and Ansley and two hunting dogs, Zoey and Bella.

ANGLER SURVEYS LEAD TO BETTER UNDERSTANDING OF WHY PEOPLE FISH. **BETTER AMENITIES FOR ANGLERS**

By: Cory Matteson

We know quite a bit about the reasons why someone wants to go fishing. When surveyed, anglers most often say that they seek the camaraderie that accompanies a day on the water, whether it be with a lifelong fishing buddy. spouse, daughter or some other confidant. Spending time in the great outdoors frequently finishes second on such surveys—"the aesthetics, just being outside, sitting on a boat, sitting on a dock, those kind of things," said Chris Chizinski, an associate professor of human dimensions at the University of Nebraska-Lincoln (UNL) School of Natural Resources (SNR).

Further down the typical list of reasons people fish, he said, is consumption, which brings us to something that has proven challenging to decipher about anglers. When they reel in a fish, will they throw it back or not, and why?

Answering questions like that is one reason why, over the past decade, anglers at 24 of Nebraska's water bodies have come to expect visits from blue-shirted UNL researchers waiting for them by boat ramps to conduct surveys about their fishing habits.

"We were at the rural lakes so much, there were a lot of anglers that enjoyed interacting with the personalities out there," said Mark Kaemingk, research assistant professor with the Nebraska Cooperative Fish and Wildlife Research Unit in the School of Natural Resources. "They figured that they could share their experience, whether it be positive or negative."

The university-led surveys differ in scope from typical fishery-management creel surveys. Rather than focus on the habits anglers display at a single lake, they shifted to a regional level, with Nebraska Game and Parks providing funding for the project.

One thing the researchers said they have discovered is that many Nebraska anglers pick their favorite fishing holes and base their fishing habits off of the conditions at those lakes. When the water level was lowered at the Red Willow Reservoir in an effort to ease pressure on the dam there, three years passed before the researchers saw a drop in fishing effort. Boaters instead became bank anglers.

It's where the angler gets to participate in the management process. Their **voice** gets to be heard. They get to engage. - Chris Chizinski,



For the past decade, UNL researchers have conducted surveys of anglers at 24 Nebraska water bodies. Survey findings are being used to guide everything from management decisions to local marketing efforts.

The historic view has been that anglers are mobile and will travel anywhere that has a good fish report, said Kevin Pope, unit leader of the U.S. Geological Survey-Nebraska Cooperative Fish and Wildlife Research Unit.

While expert anglers often head to wherever the largemouth bass or walleye are biting, Chizinski said, "the prevalence of the 'anything angler' is huge, and that's a lot different than what we expected. We expected a lot of anglers to be targeting specific species. But most, it's 'Whatever bites my hook."

Kaemingk said Game and Parks has worked in concert with the researchers—as well as with nearby communities and economic development groups—and adapted both marketing and management strategies, big- and small-based, on the survey results. Knowing that larger lakes that allow for fast boating are within an hour from Conestoga Lake, the commission began enforcing a fishing-friendly 5-mile per hour speed limit at the recently restocked reservoir. Kaemingk said that there is a lot of information coming from the survey responses that could be used to improve quality of life across Nebraska's fishing areas, and that Game and Parks is using it.

"They want information to help them make

how many boat ramps to how many restrooms, or if a fish-cleaning station is needed," Kaemingk said. Meanwhile, communities have used the data to market fishing opportunities and amenities, in hopes that will also drive visitation to hotels, restaurants and other local businesses.

As for why an angler would keep or throw back a fish, the surveys have helped researchers key in on five variables—fish size, total number of the same species an angler already caught, residence zip code, distance traveled and time fished. A data-driven map included in one of the research team's studies shows that rural, western Nebraskans are more likely to hold on to a fish than anglers who call more populous counties in eastern and southeastern Nebraska home. Their participation in the UNL-led creel surveys is helping to tell the story of fishing in Nebraska, while also improving the state of it in the process.

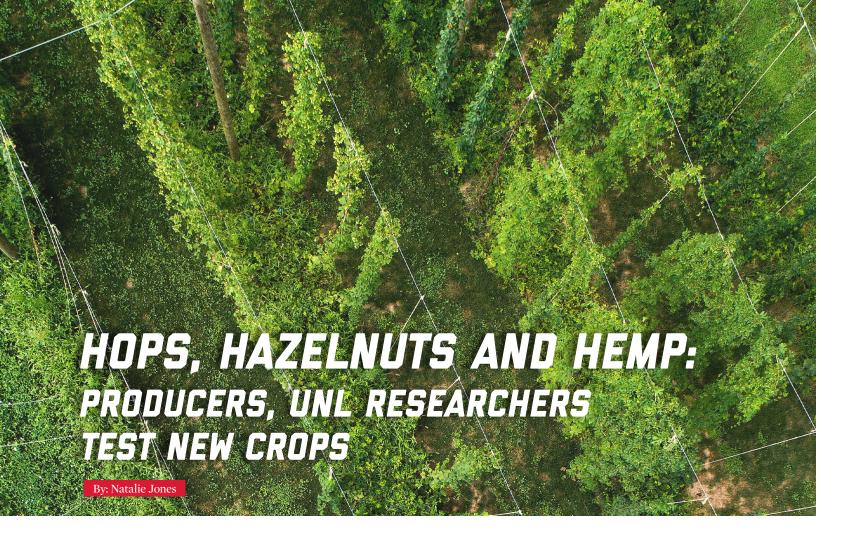
"There was a Twitter discussion recently about whether creel surveys are citizen science," Chizinski said. "It's where the angler gets to participate in the management process. Their voice gets to be heard. They get to engage."

"They're part of the data collection process," Kaemingk said.

"And I think many of them value that," Pope added.

decisions on what amenities they need to put in or upgrade, from how many parking spots to

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Traveling from east to west, Nebraska experiences a 4,584 foot elevation change, in which rainfall decreases one inch by every 25 miles. The dramatic change in rainfall and elevation from east to west—along with a variety of soil types, ecosystems and growing conditions across the state-make the state an ideal laboratory for a land-grant agricultural research institution like the University of Nebraska-Lincoln. These variables also make Nebraska a natural test bed for experimenting with nontraditional crops.

Researchers within the Institute of Agriculture and Natural Resources are working to understand how nontraditional crops such as hops, hemp and hazelnuts may provide new opportunities for Nebraska producers to diversity their operations.

Hops

Traditionally, hops production has been mainly focused in the Pacific Northwest, but a few

Nebraska producers have begun to grow them, too, harvesting a total of 46.5 acres of hops in 2019.

Mainly used for making beer, hops production is meeting the demand of Nebraska's growing craft beer industry. Keenan Amundsen, a turfgrass geneticist in the Department of Agronomy and Horticulture, has worked with Nebraska producers interested in growing hops, helping optimize commercially available seed varieties for Nebraska growing conditions.

Hops have piqued the interest of a number of producers looking to diversify their operations, Amundsen said.

Among those producers are Dave and Lisa Gleason of Kearney. After about a year of research, the Gleasons dove into production and reached out to Nebraska Extension for assistance in planting, building a trellis and watering system and more. In 2020, Oak Creek Hops marked its fourth year in production, and has successfully

marketed their hops to local brewers. The Gleasons travel to breweries across the state building relationships with brewers, learning about their craft and putting hops directly into their hands.

"You really have to build a partnership with the brewers and earn their trust so that you can provide them a high-quality product on a regular basis." Dave Gleason said.

Hemp

University of Nebraska-Lincoln professor in the Department of Agronomy and Horticulture Ismail Dweikat, says hemp has been a major crop globally for centuries and can be produced for fiber, grain, cannabidiol (CDB) and more. Hemp is differentiated from marijuana by its lower levels of THC (tetrahydrocannabinol).

In 2019, only 10 Nebraska operations were issued a license agreement from the United States Department of Agriculture after applying for cultivation for research purposes only. Dweikat, who has been researching hemp production in small plots for three crop seasons, works to identify suitable varieties and production strategies of hemp for Nebraska at the Eastern Nebraska Research and Extension Center.

Hemp production is new in Nebraska, but Dweikat says the crop shows promise.

"Nebraska has an ideal climate for hemp production with its deep and light soil, moisture, sunlight and water availability," he said.

Hemp is a multi-use crop that can help supplement crop rotation while benefitting the soil and suppressing weeds. Nebraska also has an abundance of wild hemp, especially in the eastern part of the state, which can contaminate a crop being grown for CBD. Hemp is rich in oil and can be used for hand cream, soap, oils, clothing, and for many other uses. It also shows promise for use in bio-fuel development.

"Five years ago, I realized that hemp is going to be a major crop because of so many uses," Dweikat said.

That said, hemp production faces its share of challenges. It can be difficult to keep THC levels under the legally-allowed limit, because insects, drought and disease can all push the levels higher. Producers in Nebraska and elsewhere also face a lack of market, harvesting machinery, storage facilities and processing plants.

HazeInuts

The Nebraska Forest Service at the University of Nebraska-Lincoln is a member of the Hybrid Hazelnut Research Consortium, which also includes Oregon State University, Rutgers University and the Arbor Day Foundation. Aaron Clare, forest properties manager, oversees the research program and hybrid hazelnut test plot at the Nebraska Forest Service's Horning State Farm Demonstration Facility near Plattsmouth.

"The goal of the program is to develop cultivated hazelnuts as a perennial crop in to be grown in the Midwest and Great Plains for use as food, animal feed and biofuel." Clare said.

The Hybrid Hazelnut Research Consortium works to hybridize between the European and American hazelnuts to breed a disease-resistant, large-nut varieties with thin shells and open husks that fall from the tree and climatically adapted cultivar.

Nebraska researchers identified and thoroughly tested the Grand Traverse cultivar, which could prove to be a high-value dryland crop. Hazelnut trees can also provide habitat for wildlife and pollinators, while building and increasing soil matter and sequester more carbon than annual crops due to their extensive perennial root systems.

The nutrient-dense plant is a rich source of protein, vitamin E, folate, B vitamins and arginine. Nebraska researchers have previously studied hazelnut oil for food and biofuel applications, showing that hazelnuts can produce nearly twice the amount of oil per acre as soybeans.

Looking toward the future of hazelnut production in Nebraska, Clare looks to expanded testing of plant material that researchers have, and developing more to utilize on marginal lands for production and increasing planting acres.

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REPORT: AGRICULTURE CRITICAL TO NEBRASKA ECONOMY, STATE'S RESILIENCE

By: Cara Pesek

Agriculture remains a critical component of Nebraska's economy, accounting for nearly 34% of business sales, 22% of the gross state product and nearly a quarter of the state's jobs, according to a new report by University of Nebraska-Lincoln researchers.

It's also a resilient industry. Even during years when farm and ranch incomes are low, other aspects of the agricultural production complex, including ag-related manufacturing, transportation, wholesaling and agritourism, tend to remain strong.

These are among the findings of the 2017
Economic Impact of the Nebraska Agricultural
Production Complex report, which the
Department of Agricultural Economics released
last fall. Ag economists Brad Lubben and Jeffrey
Stokes authored the report, along with Eric
Thompson of the Bureau of Business Research.

The study was conducted to provide a benchmark assessment of the economic impact of Nebraska agriculture on the state's economy. The researchers chose to use data from 2017 because it was the year of the most recent Census of Agriculture, which is administered every five years by the U.S. Department of Agriculture. It also happened to be the lowest-income year for farmers and ranchers of the decade.

In 2017, the total output of Nebraska's agricultural production complex was \$81.8 billion, accounting for 33.9% of the state's total output. The state's agricultural sector contributed \$25.7 billion to Nebraska's gross state product, representing 21.6% of the total. Even in a year like 2017 with low commodity prices and modest farm incomes, between one-fifth and one-fourth of Nebraska's economy was attributed to the agricultural production complex.

"Few other states have an economy with this degree of agricultural prominence," said Mike Boehm, Harlan Vice Chancellor for the Institute of Agriculture and Natural Resources at Nebraska and vice president of agriculture and natural resources for the University of Nebraska system. "Even as our cities grow and our economy diversifies, agriculture remains critically important to the economic prosperity of Nebraska, and it will long into the future."



In Nebraska, agriculture accounts for nearly 34% of business sales, 22% of the gross state product and nearly a quarter of the state's jobs, according to a 2020 report from the University of Nebraska-Lincoln. The state's ag sector also contributes to the resilience of Nebraska's economy as a whole.



Even during years when commodity prices are relatively low, producers still hire workers, buy and repair equipment and make other business decisions that keep most aspects of Nebraska's agricultural production complex strong.

"COVID is hurting prices, especially for some commodities. But it doesn't mean the ag sector shut down. The sector still is critical to Nebraska's overall income."

-Eric Thompson,
UNL professor of economics

Agriculture is also a huge driver of employment in Nebraska. Workers engaged in agricultural jobs during 2017 earned an estimated \$14.3 billion, including income, wages, salaries and benefits, accounting for 19.9% of all income earned by the Nebraska workforce that year. In total, 321,000 workers — 23.3% of the state's workforce — were employed in a position connected to Nebraska's ag industry that year.

Even though commodity prices were relatively low in 2017, producers still hired workers, bought and repaired equipment and made other business decisions that kept most aspects of Nebraska's agricultural production complex strong. This, Lubben said, shows that farmers and ranchers tend to make investment decisions based on long-term trends, rather than based on a single good or bad season.

It also may explain why Nebraska has been more insulated from the impacts of COVID-19 than many other states, Thompson said.

"COVID is hurting prices, especially for some commodities," he said. "But it doesn't mean the ag sector shut down. The sector still is critical to Nebraska's overall income."

Lubben said Nebraska saw a similar effect during the recession of 2008-09. For the most part, he said, commodity prices and international trade markets were strong during that time.

"During the downturn, the ag economy buffered Nebraska from the worst impacts felt by the general economy," Lubben said.

Lubben, Thompson and Stokes expect continued growth for Nebraska's agricultural production complex. Growing middle classes in China, India and elsewhere are creating new export markets. In addition, advances in technology could lead to growth in agricultural industries including food processing, ag-based manufacturing and biotechnology and transportation.

"Ag today produces more than it did 10 years ago or 20 years ago, and it will produce even more 10 or 20 years from now," Lubben said. "It's not withering. It's only getting bigger."

NEBRASKA MEP DRIVES MANUFACTURING IMPROVEMENTS

By: Jon Wilson

Matt Allmand knows the importance of manufacturing to rural towns and communities. Allmand, director of the Nebraska Manufacturing Extension Partnership, brings a personal connection that resonates with manufacturing clients. For years, he led his family's Holdrege-based business, Allmand Bros., Inc. through unprecedented growth as a leading designer and manufacturer of high-quality, portable job-site equipment. Now, Allmand is focused on applying that experience to helping manufacturing companies succeed across the state by leading the Nebraska Manufacturing Extension Partnership (MEP).

"We have training on a wide variety of key tools that repeatedly improve efficiencies and grow revenue," explains Allmand. "But I think the most important service we offer is helping manufacturers develop a strategy to create a culture of performance and trust. Without strategy you may efficiently move your organization the wrong direction, and without a culture that fosters trust and rewards performance, it's hard to get even the right things done."

The Nebraska MEP is part of the National Institute of Standards and Technology's Hollings Manufacturing Extension Partnership program. Residing within the U.S. Department of Commerce, MEP was created in 1988 with the intent of enhancing the productivity and technological performance of U.S. manufacturers. Today, the MEP program consists of 51 centers in every state and Puerto Rico with over 400 service locations and 1,300 technical experts working together to advance and strengthen U.S. manufacturing.

The Nebraska Manufacturing Extension
Partnership is Nebraska's go-to source for
advancing manufacturing. The program offers
training, certification and consulting services
relating to strategy, workforce, sustainability and
compliance, sales and marketing, continuous
improvement, quality and technology and



innovation. Since 2014, the Nebraska MEP has served more than 200 companies, including many affected by the COVID-19 pandemic. In August, the Nebraska MEP received \$300,000 in CARES Act funding, which it made available to assist manufacturers navigating the pandemic.

"The coronavirus has produced a very challenging business environment which has impacted Nebraska manufacturers in a variety of ways," Allmand said. "The CARES Act funding allowed the Nebraska MEP to offer select services free-of-charge or at greatly reduced pricing to provide the tools and methodology to strategize, operate more efficiently, and execute their business effectively."

Typically, the MEP conducts a competitive assessment with each client and identifies areas of strengths and weaknesses. Often, on-site training is offered.

"Rural areas typically don't attract a large talent pool," said Joe Roy, Nebraska MEP business development specialist. "So companies are very interested in retaining and developing the high-potential employees that are currently on staff. We've been doing many supervisor-development sessions because our clients point to it and say, 'That's what we need."

Opening new markets is key for small manufacturers to survive, and the Nebraska MEP also offers guidance so companies can obtain

the certification and level of efficiency needed to become a supplier to much larger, international companies.

"That's great for the small manufacturer's bottom line, and it also helps retain jobs," said Mike Nagle, associate director of the MEP.

The Nebraska MEP brings to the table partnerships within the University of Nebraska. The ethanol industry is uniquely served by the MEP and Nebraska Engineering through annual Process Safety workshops, co-sponsored by the Nebraska Ethanol Board and other agencies. The MEP also coordinates intern placement via the College of Engineering Partners in Pollution Prevention program.

Last October, the Nebraska MEP joined the Made in Nebraska Manufacturing Alliance, with the Nebraska Manufacturing Advisory Council, the Nebraska Advanced Manufacturing Coalition, and the Nebraska Chamber. The Alliance will align resources to equip and educate a skilled workforce, promote and advocate for manufacturing, and deepen supply-chains and business relationships.

Nearly a third of manufacturing in the state comes from the food sector. The MEP partners with the UNL Food Processing Center to provide food safety services and workshops throughout the year. Currently, the Nebraska MEP is part of a coalition with Missouri Enterprise and Kansas Manufacturing Solutions for Food Safety in the Heartland, a grant-funded food safety initiative to educate human and animal food manufacturers on the proper preventive controls and oversight during the production process.

With over 100 years of manufacturing experience among staff, best practices and strategic partnerships, the Nebraska MEP is uniquely positioned to serve the manufacturers of Nebraska.

"We are not a book-of-the-week club keeping you up-to-date on the latest jargon," said Allmand. "We provide tried-and-true best practices within a framework that ensures execution and improvements to your bottom line."



The Nebraska Manufacturing Extension Partnership offers training, certification and consulting services relating to strategy, workforce, sustainability and compliance, marketing and more to Nebraska's manufacturers.

BARKLEY CLINIC OFFERS TELEAUDIOLOGY SERVICES TO INFANTS IN WESTERN NEBRASKA

Newborn hearing screenings help with early detection of hearing loss in infants. For newborns that fail the early screening, a complete hearing evaluation before three months of age is needed to determine if the child has hearing loss. Scheduling and traveling to this evaluation can be challenging for new parents who don't live near a hospital or a pediatric audiologist.

The Barkley Speech Language and Hearing Clinic at the University of Nebraska-Lincoln has partnered with Educational Service Unit locations in western Nebraska to offer the evaluation through a HIPAA-compliant encrypted video. An audiologist at the Barkley Clinic provides the screening and coordinates services with a trained Teacher of the Deaf and Hard of Hearing available at the ESU site.

Currently, the infant tele-audiology services are available at ESU locations in Chadron, North Platte, Ogallala, Scottsbluff and Sidney. To learn more about the services offered through the Barkley Clinic, visit go.unl.edu/barkley-clinic.

RURAL BUSINESSES TEAM UP WITH YOUTH TO BOOST ECONOMIC VITALITY

Words commonly used to describe entrepreneurs include opportunistic, innovative, creative and passionate. One factor that is rarely considered in community development in connection with entrepreneurship is age. An interdisciplinary team within the College of Education and Human Sciences at the University of Nebraska-Lincoln believes there is untapped potential in youth, and that this group could be the catalyst that Nebraska's rural communities need to thrive.

Youth Entrepreneurship Clinics empower high school students in learning science, technology, engineering, arts and mathematics mathematics—or STEAM—and entrepreneurial skills to help solve real-world business challenges presented by rural local businesses and nonprofit organizations. Since the program started in 2017, over 120 students have collaborated with community leaders, business owners and educators to develop solutions for local businesses across the state.

The project is led by a team of Nebraska faculty, including Surin Kim, assistant professor in textiles, merchandising & fashion design and Nebraska Extension entrepreneurship specialist; Maria de Guzman, associate professor in child, youth and family studies and Nebraska Extension youth development specialist; and Claire Nicholas, assistant professor in textiles, merchandising & fashion design.

Kim sees the clinics as beneficial for participating students, local business partners and their communities.

"The students have the opportunity to build their professional networks, work with cutting-edge technology, explore career avenues and develop their critical thinking skills," Kim said. "At the same time, local businesses can give back to the community, invest in the talent pipeline of future generations and tap into the new ideas youth bring to the table."



At the beginning of each clinic, business representatives present their challenges to students. Over the course of the next 6-12 weeks, students meet with business owners and representatives, a program facilitator and their team to conceptualize their solution to the business challenge. Students are expected to conduct first-hand market research to learn about the organization and its customers. The clinic culminates in a pitch day, when students present their ideas to the businesses.

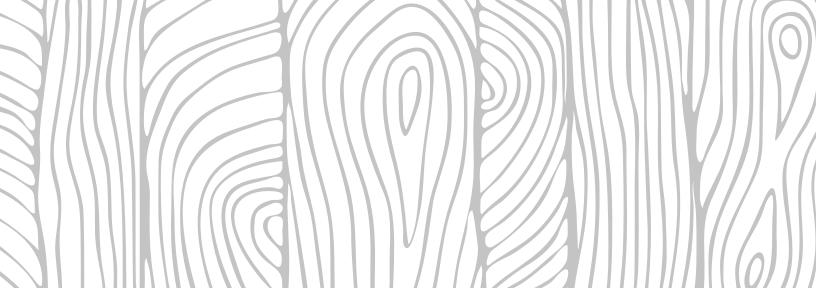
"Did youth solve part of the problem we presented? Definitely. Is the solution ready to go in the marketplace? No. But, youth did demonstrate to us that it can be solved and here's a way to solve it," said one participating business partner. "I think we learned some things about the way they chose to solve the problem, and what they were able to do with it."

Alongside the program itself, the team is conducting program evaluation and research into the factors that impact rural youth decision-making about future career paths and their perception of how geography shapes business opportunities and quality of life.

The team is expanding program offerings with a train-the-trainer workshop. The workshop will teach educators to expertly facilitate entrepreneurial and technology curriculum in various settings such as classrooms, clubs, and afterschool programs in order to equip students with entrepreneurial skills for the real world. The group is also exploring opportunities to expand the program to reach more underserved populations.

Other Nebraska Extension faculty participating in the project are Ashu Guru, former 4-H Youth Development specialist, and Andrew Larson, assistant extension educator in 4-H Youth Development; as well as graduate students from the College of Education and Human Sciences, namely, Irene Padasas, Anna Kuhlman and Olivia Kennedy.

To learn more about Youth Entrepreneurship Clinics, visit **entrepreneurshipclinics.com**.





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