



MAKING A

*Difference*

ACROSS KANSAS

**K-STATE**  
Research and Extension

Kansas State University Agricultural Experiment Station  
and Cooperative Extension Service



## FROM THE DIRECTOR FOR EXTENSION

**K-State Research and Extension professionals and volunteers have a passion. Their passion is to help Kansans succeed.**

Over the past year, our extension professionals made 6,058,267 direct and indirect educational contacts, a new record. Our volunteers made 140,356 contacts. That means 6,198,623 times our extension professionals helped Kansans to improve their lives, livelihoods and communities by providing them with nationally recognized extension programs.

Whenever and wherever Kansans address challenges related to community vitality, health and wellness, global food systems, conserving water and natural resources of Kansas and developing the state's future leaders, K-State Research and Extension professionals and volunteers are available to help them succeed.

Together, we are improving Kansas!

A handwritten signature in purple ink that reads "Gregg Hadley". The signature is written in a cursive, flowing style.

Gregg Hadley

## 2021-2022 Extension Educational Contacts

Every year, K-State Research and Extension records the number of direct and indirect educational contacts made through extension programming efforts across the state. A direct educational contact happens when an extension professional meets with a client. An indirect educational contact is recorded when a programming effort or resource is distributed through radio, video, social media, email, etc.

*Direct educational contacts reported:*

**595,611**

*Indirect educational contacts reported:*

**5,498,656**

*Volunteer educational contacts made:*

**140,356**

### *Direct educational contacts by each Grand Challenge*



**116,097**

**GLOBAL FOOD SYSTEMS**



**59,391**

**WATER AND NATURAL RESOURCES**



**93,460**

**HEALTH**



**98,912**

**COMMUNITY VITALITY**



**227,751**

**DEVELOPING TOMORROW'S LEADERS**

Throughout the following pages, we highlight programmatic efforts impacting each challenge. With your support, the work we do today will shape the future of tomorrow.



# OUR GRAND CHALLENGES



K-State Research and Extension focuses its efforts on five grand challenges that directly or indirectly affect all Kansans.

Extension professionals at the local, regional and state level work together, and with statewide and community partners to develop and offer programmatic efforts that fall within each of the following grand challenges.

## GLOBAL FOOD SYSTEMS

To feed a growing population, we are focused on developing innovative ways to help farmers, ranchers and agribusinesses improve profitability, efficiency and sustainability for Kansas, our nation and the world through cutting-edge research in areas such as genetics, disease prevention, food security and farm bill education.



## WATER AND NATURAL RESOURCES

To ensure future generations have a reliable source of clean water, we are focused on developing and implementing programs that help Kansans maintain and improve water quality and quantity. These include pioneering new practices and techniques, researching high-priority water issues, facilitating meetings among local, state, and federal officials and effectively communicating research results.



## HEALTH

Thirty-five percent of Kansas adults are obese, and 16.7% of children live in poverty. Our programs address quality of life, healthy development and healthy behaviors across life stages for all socioeconomic groups in Kansas.



## COMMUNITY VITALITY

Rural, suburban and urban communities throughout Kansas face many similar and unique challenges. Through efforts like grant writing workshops, leadership development and linking small businesses with university resources and support, we are helping to build, grow and sustain communities across Kansas.



## DEVELOPING TOMORROW'S LEADERS

The complex global society of the future will require leaders with effective teamwork and communication skills. We are dedicated to preparing leaders of all ages, so they may contribute to a vibrant Kansas economy for years to come.



# GLOBAL FOOD SYSTEMS

In 2020, the agricultural industry contributed \$70.3 billion to the Kansas economy. Agriculture is the largest employer in the state with 250,058 people, accounting for 13% of the entire workforce.

We are working to improve food and agricultural systems locally and nationally by developing resources and programming to help farmers and ranchers become more efficient, capitalize on opportunities and grow their operations.

## KANSAS AGRICULTURE



Source: Kansas Department of Agriculture

## Responding to Drought

The recent drought affecting Kansas and other states put a strain on cattle producers' ability to maintain livestock. With the quality and quantity of forage compromised, the disruption in normal feeding plans meant producers faced complex decisions on herd inventory and had to make management changes based on forage availability while trying to control escalating costs.

To help producers deal with the drought's stress and uncertainty, state and local extension experts delivered programming and resources designed to help cattle producers understand how to better manage forage and nutritional needs for cattle.

Efforts included hosting forage management seminars, **collecting more than 1,700 forage samples to be tested for nitrate and prussic acid and engaging in more than 3,000 producer consultations**, discussing items like test results and feed rations.



## RESPONDING TO DROUGHT

**200**  
PRODUCERS  
ATTENDED  
MEETINGS

**1,700**  
FORAGE  
SAMPLES  
COLLECTED

**3,000**  
CONSULTATIONS  
WITH  
PRODUCERS



## Helping Producers Navigate Economic Uncertainty

Supply chain issues due to the pandemic, rising inflation and Russia's invasion of Ukraine created volatile operating conditions for agricultural producers. While producers benefited from higher grain prices, input costs like fuel, fertilizer and agricultural chemicals stressed bottom lines.

To address producers' growing concerns over market volatility, extension agricultural economists facilitated two programs online and in-person.

One addressed the impact of the Ukrainian conflict on agricultural markets in Kansas. Nine webinars were hosted from March to September. Topics ranged from grain and livestock markets to interest rates and international trade. **The series garnered 2,571 live views and had 4,457 views on YouTube totaling 991 viewing hours.**

A second programmatic effort taught producers how to use crop insurance and pre-harvest marketing strategies to improve grain marketing risk management. This workshop, in partnership with the North Central Extension Risk Management Center, provided hands-on learning at 11 statewide locations. Participants learned how to use the information and simulations provided in the workshops to develop marketing plans for their operations.

Follow-up webinars were conducted to help producers stay on track with their marketing plan and advise others who hadn't participated in the workshops on how to develop and use a plan. **There were six online sessions with a total of 701 participants. There were 670 additional views of webinar recordings on YouTube, gathering 168.4 viewing hours.**



## **Bringing Women in Agriculture Together**

According to the USDA, there are 30,497 women in Kansas farming over 19.6 million acres. To bring agricultural women together to exchange ideas and learn new concepts to move their operations forward, extension economists worked with local extension agents to facilitate Risk Management Skills for Women in Ag workshops at 28 statewide locations.

Workshops were focused on teaching principles of crop insurance, crop marketing, government farm programs and calculating cost of production.

Of participants who completed evaluations following the workshops, 96% of respondents indicated information presented was valuable or very valuable.



## WATER AND NATURAL RESOURCES

Preserving the state's water and natural resources continues to be at the forefront of K-State initiatives. Current research suggests 69% of the groundwater in the Ogallala Aquifer could be depleted within 50 years, negatively impacting Kansans and the economy. Extension researchers are also working to address sediment and silt issues in large reservoirs that supply drinking water and provide recreation.

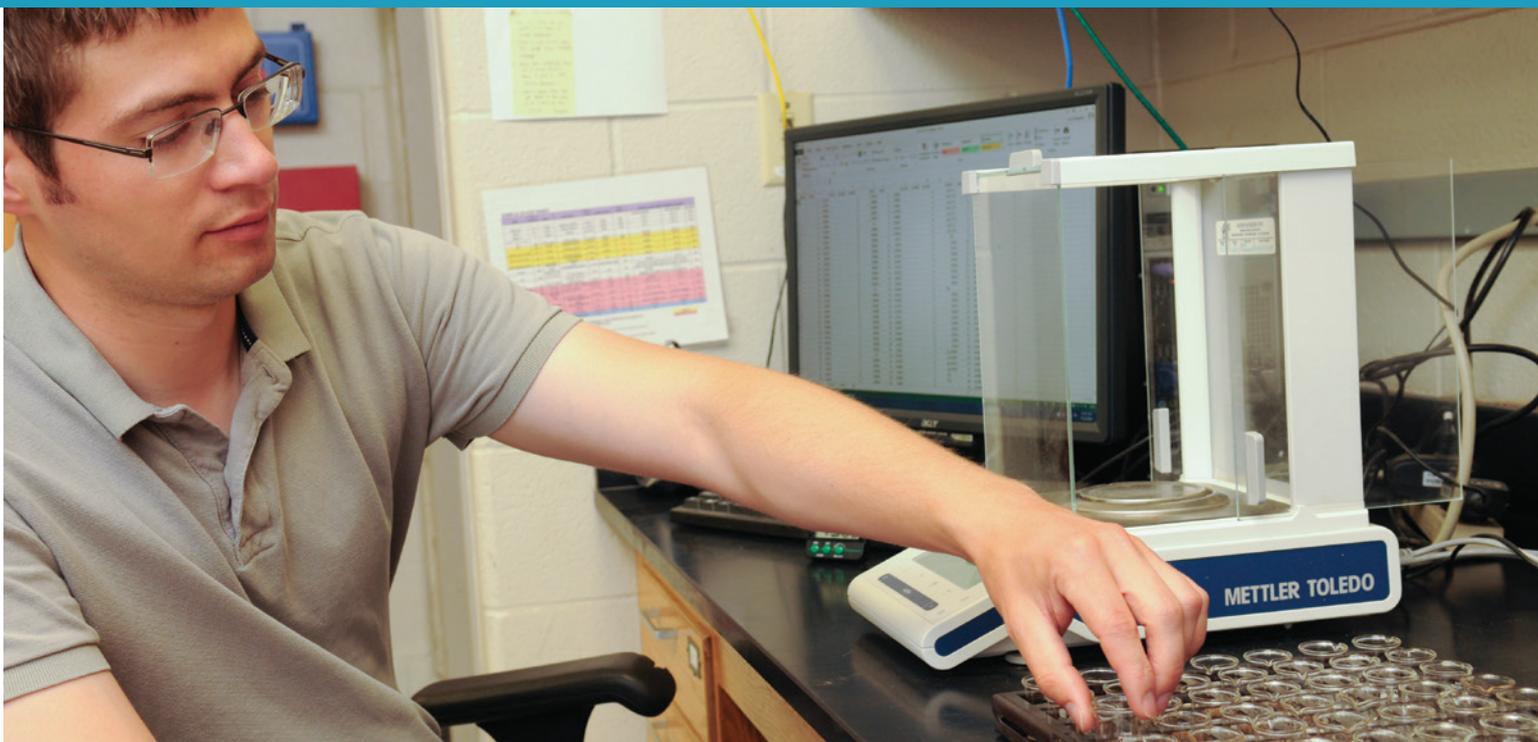
The following programs are examples of how we are partnering with Kansans, communities and state and federal conservation agencies to more responsibly use these precious resources.

### Identifying and Testing for Harmful Blue-Green Algal Blooms

Blue-green algae is common in lakes, ponds, and other water bodies. Its blooms, called harmful algal blooms (HABs) can produce dangerous toxins, causing very serious health concerns for citizens, livestock and pets.

Blooms are unpredictable, and there is no guaranteed way to prevent HABs; however, best practices can reduce the frequency of HAB-associated issues.

Producers needed advice to identify algal blooms, use onsite testing methods for HABs and learn best practices for reducing bloom frequency. Natural resource specialists and local agents delivered in-person and online trainings, offered sessions on HABs during the Winter Ranch Management program, advised local community members on HABs and facilitated personal visits to test ponds for blue-green algae-related toxins.



## Soil Testing Services Increase Environmental Stewardship

Soils vary greatly across Kansas. Many soils in horticultural settings are high in phosphorus and other nutrients, meaning fertilizer is often not needed for the planting of healthy lawns, gardens and landscapes. Soil test recommendations are critical tools to help citizens avoid the use of unneeded fertilizers, leading to less pollution and better water quality.

To address this issue, **horticulture extension professionals provided individualized soil test result interpretations for more than 2,000 Kansas citizens in the 2021-2022 programmatic year.** These consulting services resulted in better plant growth and improved environmental sustainability.

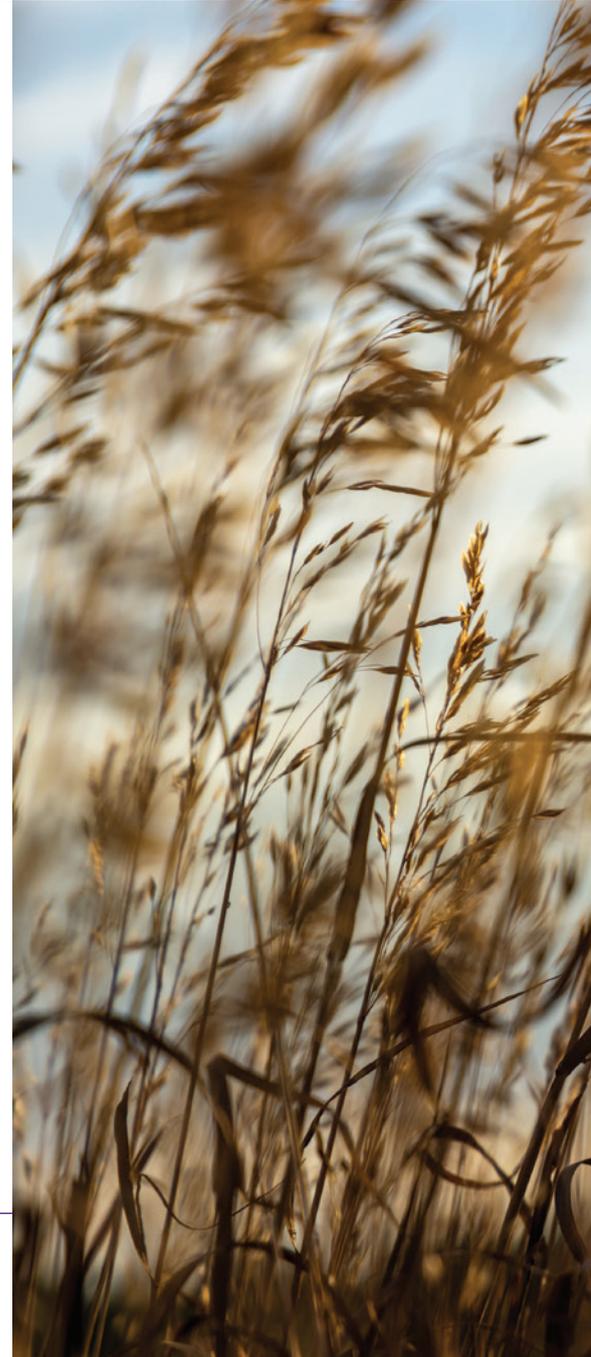


## Mitigating Armyworm Damage

For Eastern Kansas broomegrass producers, 2021 will be remembered as the year of fall armyworm damage. High numbers of fall armyworm larvae, coupled with post-harvest drought stress, resulted in significant damage from stand defoliation. Longterm losses caused by armyworms are still noticeable in eastern parts of the state.

To help producers identify, understand and control the pests, extension agents in affected areas answered field calls, distributed information and hosted producer meetings. In addition to outreach efforts, the fall armyworm infestation provided opportunities for research.

After extension educational efforts during the growing season, farmers were able to identify the fall armyworm and better understand its life cycle. Also, farmers could make informed decisions on controlling the insect and when to scout for additional control measures. At the conclusion of extension broomegrass roundtable meetings, 90% of participants who completed surveys said they could dig up plants and determine if the crown was alive or dead and 75% knew what to do with stands that appeared dead.





**90%**

of participants said they could dig up plants and determine if the crown was alive or dead



**75%**

of participants knew what to do with a stand that appeared dead



Another critical issue we are focused on is ensuring Kansans have access to adequate resources to make informed decisions about their health and well-being. Through programming on how to manage diabetes and other illnesses and Medicare counseling, extension experts work to help Kansans improve their quality of life, and also save lives through suicide prevention training.

## Suicide Prevention Training

From 2018 to 2020, the suicide rate in Kansas increased by 70%. In 2019, suicide was ranked the ninth leading cause of death. Today, suicide is the second leading cause of death following unintentional injuries for Kansans between the ages of 15 to 34.

In response to this growing crisis, extension professionals became certified suicide prevention instructors with the *Question. Persuade. Refer.* (QPR) training. The QPR evidence-based training for suicide prevention is designed to teach people how to recognize suicidal warning signs. Following their certification, extension professionals facilitated QPR trainings across the state. Of those who completed training evaluations, 94% indicated they would

recommend QPR training to others and 96% indicated they were now equipped with the knowledge on how to find help for someone with suicidal ideations.

**94%**

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**96%**

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## **Gardening Webinars Improve Physical and Mental Health**

With concerns about food insecurity, the rising cost of groceries and physical and mental well-being, more and more Kansans are turning to gardening.

With a growing number of gardeners comes a need for relevant, timely, research-based horticultural information. Using the expertise of extension horticulturists, the K-State Garden Hour webinar series has shared gardening knowledge across the state, reaching over 29,325 gardeners in 2020 and 2021.

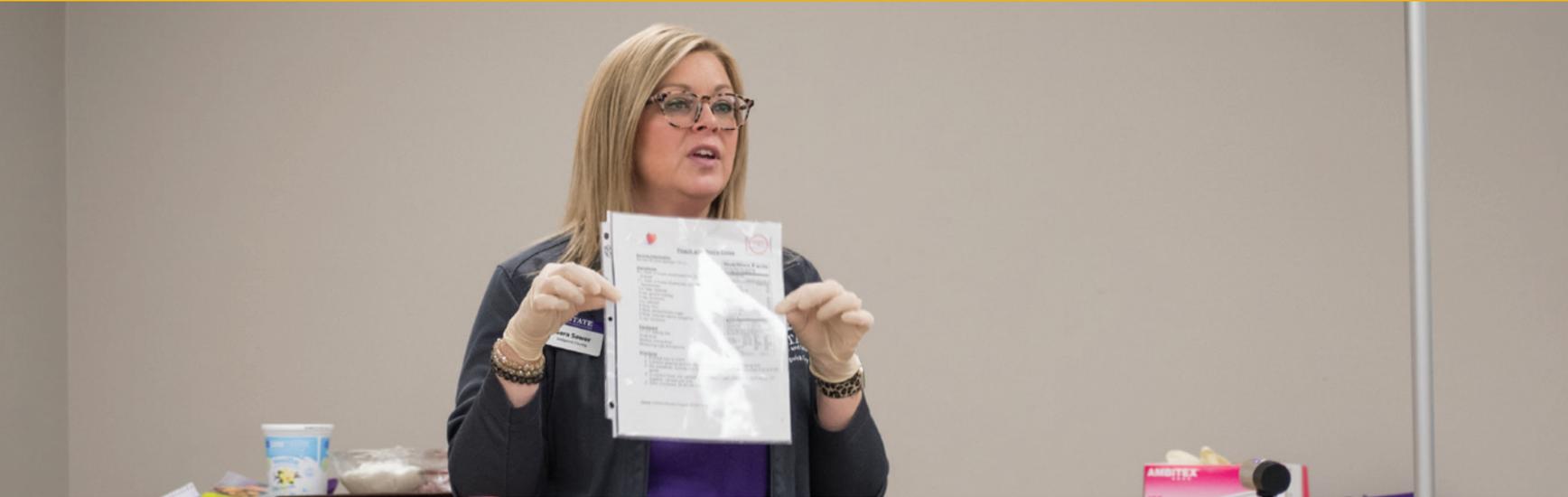
This success continued in 2022. From January to October 2022, **the K-State Garden Hour reached more than 12,031 participants. Live attendance reached more than 5,660 people and 6,371 people watched recorded presentations. Participants represented 96 of 105 Kansas counties. Webinars were also attended by participants from 40 U.S. states, the District of Columbia, four continents and nine countries.**



## Health Insurance Counseling for Kansas Seniors

Every day 10,000 Americans become eligible for Medicare. For Medicare beneficiaries, particularly those living near or below the poverty line, making sound financial decisions related to health insurance can alleviate stress. It can also free up income to meet other goals, improve health outcomes and support local economies when those dollars stay in the community.

Extension professionals covering 35 counties provided health insurance education in both one-on-one and group settings for soon-to-be eligible, newly-eligible and long-time Medicare beneficiaries. **During the fall 2021 open enrollment period, extension professionals educated 3,838 Kansans through the process of Medicare plan comparisons and explanation of benefits covered. Participants who completed plan comparisons and changed prescription drugs or Medicare Advantage plans to a plan that better met their needs saved \$4,643,960.**



## Addressing Diabetes and Obesity in Adults and Youth

Obesity and diabetes are two major health concerns for Kansas. Direct and indirect healthcare expenses associated with diabetes alone are approximately \$2.4 billion annually.

As the sixth leading cause of death in Kansas, diabetes also contributes to the development of other health conditions like chronic kidney disease, heart disease and stroke. Just as concerning are obesity rates among Kansas youth. More than 10% of youth between the ages of 10 to 17 are considered obese. Teens who are obese have a 70% to 80% chance of becoming obese adults.

Research shows the best way to manage diabetes and obesity is to enact behavior change. One way extension professionals are addressing challenges associated with diabetes is by facilitating the nationally recognized *Dining with Diabetes* educational program. Course participants

engage in a four-session series offered in-person or online. The program supports behavior change by offering lessons in nutrition, food preparation and physical activity.

To address childhood obesity, K-State Research and Extension's Department of 4-H Youth Development partnered with SNAP-Ed to administer Cornell University's *Choose Health: Food, Fun and Fitness* curriculum to youth between the ages of 8 to 15. The curriculum targets behaviors most important for preventing childhood obesity and chronic disease. **The curriculum taught 2,602 Kansas youth.** Follow-up surveys indicated participants were more likely to exercise often and for longer intervals, drink less soda and fruit-flavored sports drinks, consume more vegetables and fruits and spend less time on digital devices.



# COMMUNITY VITALITY

As Kansans relocate to population centers, rural communities are experiencing the loss of thriving businesses. Residents may lose access to healthcare, grocery stores, childcare and more. To keep communities economically vibrant, extension professionals have stepped in to help with technical assistance and evidence-based programming.

## Improving Local Food Systems

Kansas residents need healthy food and strong local farm economies. One potential solution is to produce more healthy food locally and to increase demand for locally grown products.

To bring groups together to help solve problems as a team, the extension local foods team began holding quarterly virtual town halls as an outlet for people to network, share their experiences and their expertise.

An average of 55 participants attended each of the five town halls and many have viewed recordings online. Town hall attendees included extension and university personnel, state agencies, nonprofits and educational institutions, among others. These meetings enabled the development of ideas and partnerships for grant proposals and highlighted ongoing local foods initiatives. **These collaborations helped the extension local foods team secure a three-year \$749,696 grant from USDA's Agriculture Marketing Service.**



## Grant Writing Workshops Help Community Organizations

Communities struggle to find resources to fund priority projects. However, according to data released at the Kansas Infrastructure Summit (July 2022), Kansas is eligible to compete for \$480 billion of competitive grants from the Bipartisan Infrastructure Law.

Recognizing the need for more training on how to write successful grant proposals, extension experts hosted grant writing workshops in-person and online across the state.

Of the 584 participants who completed post-workshop surveys, 99% learned new sources for finding grants and 95% have greater confidence writing successful grants.

Following the workshops, **\$71.8 million in grant funding requests were written by participants. Of those, participants secured \$38 million in grant funding for childcare, technology, education, prevention programs, parks, economic development and more.**

### GRANT WRITING WORKSHOPS





## COMMUNITY VITALITY

### Extension Master Gardener Program Engages Community Members

The statewide demand for horticultural information often exceeds the ability of local agents to meet client needs. The Extension Master Gardener program and volunteers are vital to provide communities with accurate, up-to-date research-based horticultural information.

Extension Master Gardeners participate in a comprehensive training covering topics like plant growth and development, fruits and vegetables, flowering plants, trees and shrubs and plant pathology.

Following their training, Extension Master Gardeners are expected to log volunteer hours within their communities. These hours are served by delivering home lawn, garden and landscaping information to both adults and youth.

Trained volunteers also assist with community gardens, answering extension gardening hotlines, after school programming and more.

During the programmatic year, there were 1,201 active Extension Master Gardener volunteers across the state. Volunteers completed more than 20,459 hours of advanced training and, on average, each volunteer shared their knowledge with more than 50 people in their local community. **Altogether, volunteers donated over 91,083 hours of service back to their communities. These contributions are equivalent to more than \$2.6 million in personnel time.**





# DEVELOPING TOMORROW'S LEADERS

Strong communities require strong individuals to lead and support them. Extension recognizes leadership is a skill that can be developed and improved. To further support communities and the future leaders of Kansas, extension offers leadership programming tailored toward youth and adults.

## Offering Board Members Leadership Basics

Organizations are generally structured to provide a service or accomplish an objective. Understanding how organized groups should function and meet objectives is critical to their success.

*Welcome A-Board: Board Leadership Basics* is a program developed by extension experts to provide community groups necessary training to be effective and efficient in their roles. This program has been used to help participants learn how to be better leaders and increase their engagement on community boards and committees.

Following trainings, survey respondents indicated they felt better prepared to facilitate productive meetings, manage conflict and develop strategic plans.

## 4-H Engages Kansas Youth through Grant-Funded Learning Project

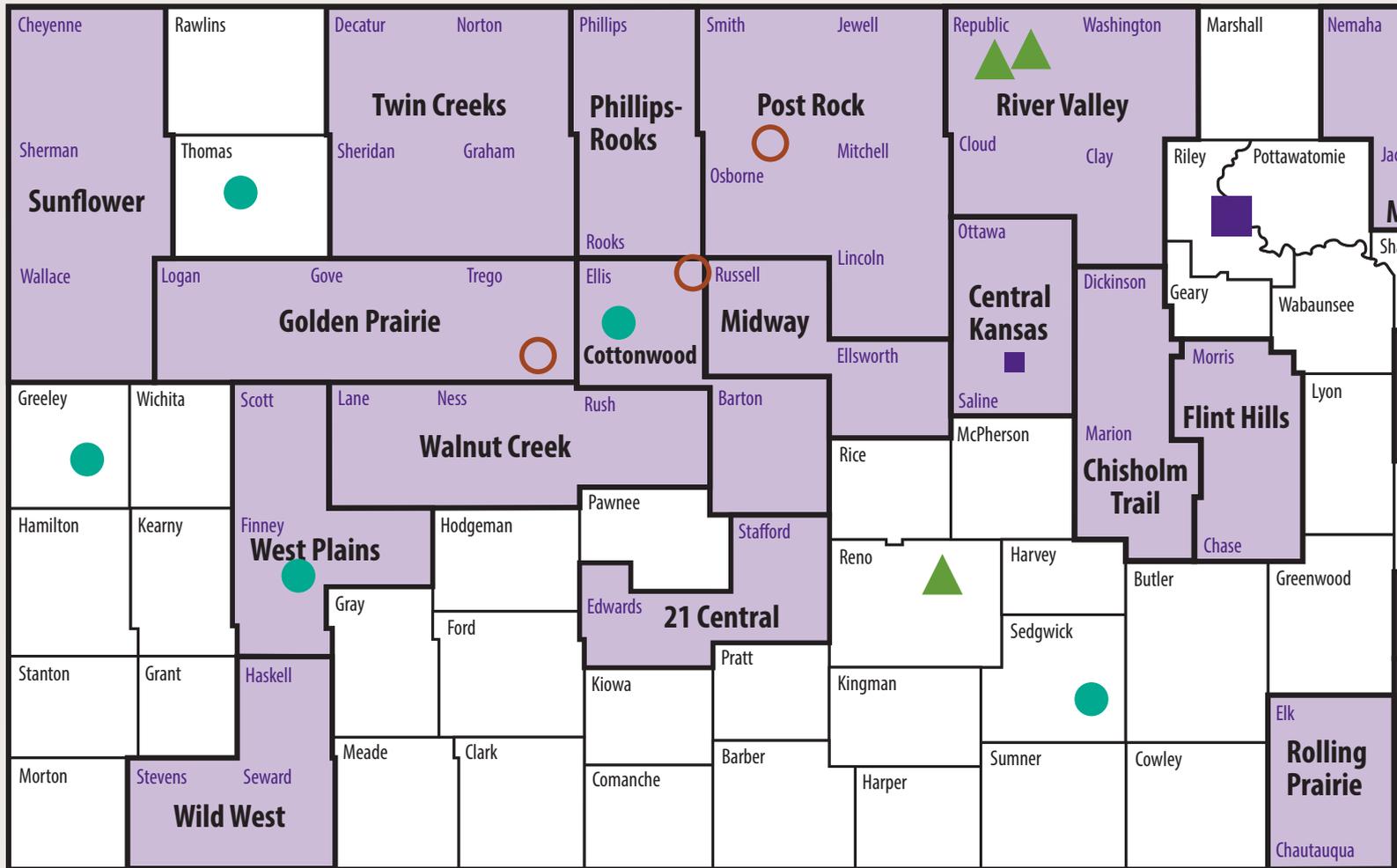
Due to lost learning opportunities caused by COVID-19, the Kansas Department of Education accepted proposals outlining educational opportunities for youth. Kansas 4-H was awarded a \$4.2 million three-year grant to provide educational opportunities in areas such as STEM, agriculture and natural resources, creative arts, family and consumer science and personal development.

Throughout the summer of 2022, extension agents, summer interns and adult volunteers facilitated learning opportunities that helped youth explore their interests. Through experiential learning and positive youth-adult relationships, participants built connections and engaged in activities like day camps and special interest project clubs.

During the program, 56 summer interns were hired to help extension agents in counties plan, organize and facilitate learning opportunities. These agents and interns partnered with local school districts, libraries, Boys & Girls clubs and other community groups to engage youth. Because of this, **22,611 youth participated in summer learning activities**. Interns also gained valuable skills and were able to explore education as a potential career.



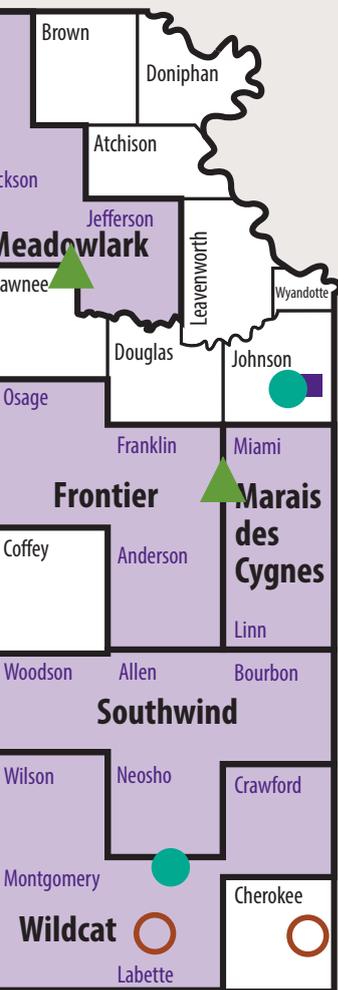
# STATEWIDE LOCATIONS



- Kansas State University
- Districts
- Satellite Stations
- Research-Extension Centers
-

# A presence in all **105** counties.

With scientists, educators and volunteers in each of the state's 105 counties, our K-State Research and Extension professionals strive to make the university's research and scientific accomplishments accessible and relevant to every household.



7/2022

**21**

district units

**46**

county units

**12**

research centers  
and satellite  
stations

**5**

experiment  
fields



*Learn more about our statewide locations*

Experiment Fields

**K-State Research and Extension**  
123 Umberger Hall, 1612 Claflin Road  
Manhattan, KS 66506

Nonprofit ORG  
U.S. POSTAGE

**PAID**

Permit #525  
Manhattan, KS 66502

# K-STATE

Research and Extension

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**Kansas State University Agricultural Experiment Station and Cooperative Extension Service**

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