

2024 Annual Report to the
Kansas Legislature



Driving Innovation in Agriculture

KANSAS STATE
UNIVERSITY®

College of Agriculture

K-STATE
Research and Extension



The College of Agriculture is stepping out. They’re really providing leadership about how business will be done in the future. Not only at Kansas State, but in every part of higher education.

*Marshall Stewart
Senior Vice President for Executive Affairs,
University Engagement and Partnerships, and
Chief of Staff, Kansas State University*





Dear Friends:

As we move forward into 2024, I am looking forward to what the year will bring to the College of Agriculture and K-State Research and Extension.

Last year, the College of Agriculture broke ground on the Agronomy Research and Innovation Center in May and the Billbrey Family Event Center in December. We will turn the dirt on a third facility in 2024, the Global Center for Grain and Food Innovation. These buildings are key to our “Agriculture Innovation Initiative,” which is part of K-State’s vision to become the nation’s premier next-generation land-grant university.

The Ag Innovation Initiative will deliver new agricultural science discoveries through interdisciplinary research between departments across the university and with our private and public partners. Industry, faculty and students will work together to collaboratively drive economic development and innovation that benefits Kansas, the nation and the world.

Today, agriculture is the state’s largest economic driver – generating approximately \$76 billion annually. The Ag Innovation Initiative will be key in the expansion of both Kansas’ economic and workforce development opportunities.

An integral pillar of K-State’s Next Generation Plan, which the university rolled out last fall, is “K-State 105.” K-State 105 helps all 105 counties in Kansas in areas such as community vitality and business, entrepreneurial and workforce development. How will this succeed? By leveraging K-State Research and Extension to deliver the university’s collective knowledge and activate our extensive network of partners to impact the lives of every Kansan where they both live and work.

Cooperative Extension has been improving the quality of life and standard of living for Kansans for more than a century – and combining it with K-State 105 is exciting for the state as we continue to push forward into the next quarter of this century.

The near future for the College of Agriculture and K-State Research and Extension is exciting, and the payoffs for Kansas will be great for years to come. I know I speak for everyone in our organization when I say thank you for your support.

A handwritten signature in purple ink that reads "J. Ernest Minton". The signature is fluid and cursive, with a large initial "J".

J. Ernest Minton, Ph.D.
*Eldon Gideon Dean, College of Agriculture
Director, K-State Research and Extension*

BUILDING THE FUTURE OF KANSAS AGRICULTURE

Our Agriculture Innovation Initiative

Kansas State University is more than two-thirds of the way toward an ambitious goal to raise \$210 million to improve nine agricultural facilities that university officials say will benefit the state academically and economically.

The KSU Foundation reported in early November 2023 that more than \$149.3 million – just over 71% – has been raised toward the Agriculture Innovation Initiative, which leverages K-State’s strengths in food and agriculture.

“At K-State, we see this as a new way of thinking,” said university president Richard Linton. “We think of infrastructure as a way of being an incubator for strong public-private partnerships where industry can work hand-in-hand with K-State researchers to leverage ideas and funding to move forward and develop the students of tomorrow. In doing so, we will create markets and jobs that are important for our stakeholders.”

K-State marked the official kickoff of an initial \$125 million in agricultural infrastructure improvements on May 15 with a groundbreaking ceremony for the

Agronomy Research and Innovation Center, north of the university’s main campus.

“In the last 10 years alone, the Department of Agronomy has conducted more than \$50 million of research that is initiated right here at the Agronomy North Farm,” said Raj Khosla, department head. “The new Agronomy Research and Innovation Center will bring research teams together from around campus to create new discoveries and solutions that will address the wicked challenges we are facing in agriculture today, and ones that will come in the future.”

The initial projects – anticipated for completion by 2026 – also include construction of the Global Center for Grain and Food Innovation (which will connect Weber Hall and Call Hall) in the heart of the university’s main campus. In December, the college broke ground north of campus on the Bilbrey Family Event Center, which will be the college’s premier facility for K-State’s animal sciences program.

“The (agronomy) center is a keystone for the College of Agriculture’s vision to strengthen and diversify agribusiness in Kansas and around the globe,” said Minton, the Eldon Gideon Dean of the College of Agriculture.



K-State's early fundraising effort was matched by a \$25 million challenge grant from the Kansas legislature, and \$25 million more from an initial legislative appropriation.

"We saw (the legislature's contributions) as one of the smartest investments we could make in the future of our state," said Kansas Gov. Laura Kelly during the groundbreaking for the agronomy project. "Said another way, right here in Kansas, we will be determining what agriculture will look like for the next 1,000 years."

Many private organizations have been eager to jump on board. By November 2023, some of the major contributors to K-State's Agricultural Innovation Initiative include the Kansas Soybean Commission, Kansas Farm Bureau, Ardent Mills, Farm Credit Associations of Kansas and CoBank.

"This creates a better economy for all of us in Kansas," Linton said. "It's a great example of realizing our vision of what we like to call the next generation land-grant university. We are asking questions of what the interaction needs to look like between the next generation of land-grant students and stakeholders."

More information about K-State's Agriculture Innovation Initiative is available online at kstate.ag/innovation.



FACING THE KANSAS DROUGHT

Water Experts Focus on the Challenges Across the State

K-State researchers and extension professionals across the state credit a team-first philosophy for progress being made to improve water quality and conserve available resources.

Susan Metzger, director of the Kansas Center for Agricultural Resources and the Environment, said it's common for K-State faculty to work together across several areas of expertise to study water issues.

"We have researchers who might be sociologists or economists or agronomists or something else, all pulling together because no one discipline can tackle our water resource challenges," Metzger said.

She noted a project in Hays, Kansas in which city officials and a K-State watershed specialist are working together to implement water quality and conservation practices

within the entire watershed, or the land area that channels surface water to a single point from where it is accessed.

"They are investing in practices that improve their water supply," Metzger said. "What happens in the watershed above our cities and towns impacts the water supply that we rely on for drinking water."

That project "is focused on one community, but there are many larger, urban communities that can echo the same practices, too, and K-State has a role in all of those watersheds." A project in the Little Arkansas River watershed, for example, is helping to improve the water for the city of Wichita, she said.

In western Kansas, Metzger said Jonathan Aguilar – a water engineer at K-State Research and Extension's Southwest

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What happens in the watershed above our cities and towns impacts the water supply that we rely on for drinking water.

Susan Metzger
Director, Kansas Center for Agricultural Resources and Environment

— ” —

Research Center in Garden City – has become the go-to guy for water research in that critical region.

Aguilar’s recent work includes a study of the perceptions of farmers toward water use in the region of the Ogallala Aquifer, a shallow water table aquifer that stretches across 174,000 square miles and touches parts of eight states, including the western third of Kansas.

In early 2023, Aguilar reported results of a survey of more than 1,000 producers living in that region. The farmers, he said, expressed their desire to protect water not only for their own farm or ranch, but also for the well-being of their community. He also said most producers already are doing something in their current operation to conserve water.

Metzger said K-State agricultural economist Bill Golden is working on studies of the economic impact of changing water quality or water conservation practices. She noted

that his multi-year research has shown that farmers can reduce water use and still be profitable.

Metzger calls K-State’s commitment to water research “extensive,” saying it is the product of the university’s “prominent role in irrigation and water use research in Kansas.”

Water quality and conservation, she adds, “is not a new issue. It’s been a concern since before Kansas even became a state. It just seems to always come to the forefront of our attention whenever we’re in times of extreme drought, which is certainly what we’ve been experiencing in Kansas lately.”

Learn more about the Kansas Center for Agricultural Resources and Environment by visiting ksre-learn.com/kcare.



A man with a beard is shown in profile, looking towards the right, holding a drone. The background is a lush green cornfield under a clear sky. The drone is a black quadcopter with a camera mounted on the front. The text is overlaid on a semi-transparent dark grey box.

INTERDISCIPLINARY EXPERTISE IN ACTION

The Institute for Digital Agriculture and Advanced Analytics

K-State has positioned itself as a national leader in digital agriculture with the launch of the Institute for Digital Agriculture and Advanced Analytics.

Work done at the institute will include developing and integrating analytical methods and digital technologies — like sensors, automation and robots — that enhance food production and inform decision making for sustainable and resilient systems.

“A next-generation land-grant university is an innovative university, and that’s exactly what we’re doing with our new Institute for Digital Agriculture and Advanced Analytics,” said President Linton. “Through this new institute, Kansas State University is working

across disciplines to solve global agricultural problems and build the economic prosperity of Kansas and one of our state’s key industries.”

In 2023, K-State precision agriculture economist Terry Griffin and colleagues at the U.S. Department of Agriculture’s Economic Research Service reported findings of a study indicating that farmers’ adoption of precision agriculture technology during the first two decades of the 21st century has increased ten-fold or more.

The Institute connects expertise from the College of Agriculture, the College of Arts and Sciences, the College of Education, the Carl R. Ice College of Engineering, Kansas State University Salina Aerospace and

Technology Campus, and K-State Research and Extension.

“The interdisciplinary structure of the institute will give faculty and students the opportunity to experience firsthand how professionals in different disciplines approach and solve problems,” said Shawn Hutchinson, K-State professor of geography and geospatial sciences.

“These perspectives and deep technological expertise will enrich agricultural research and outreach efforts and strengthen degree programs, producing our next-generation agricultural practitioners, researchers and policymakers.”

University officials said innovation through this effort includes public-private partnerships with industry experts and collaboration with Kansas communities.

“The goal is to expand our digital footprint to rural communities to facilitate innovative and entrepreneurial ideas with research-driven expertise as it pertains to digital ag,” said Ignacio Ciampitti, K-State professor of agronomy. “Our team has faculty with K-State Research and Extension appointments facilitating the translation of our science from the research and classroom to every county in Kansas.”

The institute will directly align with the interdisciplinary areas of focus outlined

in the Next-Gen K-State strategic plan that comprise the K-State Opportunity Agenda: community health and well-being, sustainability, global food security and biosecurity, and enabling technologies k-state.edu/next-gen/plan/opportunity-agenda/.

“Our team is ready to develop and expand the digital ag capacity at K-State to enhance the lives of Kansans, now and into the future,” said Susan Metzger, director of the Kansas Center for Agricultural Resources and Environment and the Kansas Water Resources Institute.

“We will not only help train the next generations of thinkers using existing university personnel and programs, but we feel this cooperation will help us prepare the new workforce for the future of our state while developing a university-wide road map on these critical topics in research, teaching and extension.”

For more information about K-State's Institute for Digital Agriculture and Advanced Analytics, visit the institute's website, kstate.ag/digital-ag or email id3a@k-state.edu.



COMMITTED TO BOTH AGRICULTURAL AND ECONOMIC GROWTH

The wellbeing of Kansas communities relies on attracting new business and industry to the state. The history of K-State is filled with examples of how agricultural research, education and outreach have contributed to economic opportunity and prosperity in rural, urban and suburban areas.

Ernie Minton, the Eldon Gideon Dean of the College of Agriculture, said from the classroom to the field, the university is fiercely committed to its land-grant responsibilities.

“We firmly believe that the academic degree programs, along with research and innovation in the commodity processing and value-added food space, provide a strong pull to companies that engage in those industries,” Minton said. “The attraction of value-added businesses is a perfect fit with K-State’s connection to Kansas agriculture and its role as a land-grant institution.”


In the past year, three examples highlight how K-State’s research and extension presence is creating economic opportunities in Kansas communities:

Scoular announces plans to build crush facility in Goodland

Scoular, a Nebraska-based agribusiness, will make an investment to retrofit a former sunflower crush facility in Goodland to process soybeans and canola. Up to 40 new jobs will be created; the facility is expected to begin operations in fall 2024.

Because of its high oil content, canola is highly valued in the renewable fuels sector, particularly for use in the growing renewable diesel and sustainable aviation fuel markets. Those markets will grow to more than five billion gallons by 2025.

The facility will process 11 million bushels of oilseeds a year, toggling between canola and soybeans as availability dictates. As low-carbon crops such as camelina are developed in the future, Scoular will be able to process those new seeds.



Beck's Seed Company breaks ground in Salina

Indiana-based Beck's, the country's largest family-owned retail seed company – and third largest overall – broke ground in October to build a 96,000 square foot distribution building and 100 acres of farmland near Salina.

The site will be used for research studies and educating local farmers about their products, while highlighting crop management practices.

Beck's seed products include high-yielding corn, soybeans, sorghum, wheat, alfalfa, corn silage and Great Harvest Organics. The company said it plans to hire locally for several positions.

Michelin invests more than \$100M in rubber tracks for agricultural equipment

In mid-summer 2023, Michelin announced its plans to invest more than \$100 million into a facility that will produce Camso rubber tracks for agricultural equipment. Over the next five years, the facility will add an estimated 200 jobs to the local economy.

Camso, a brand under the Michelin group, specializes in off-road tires, rubber tracks and systems for material handling, construction, agriculture and power sports industries.

In the past two years, Michelin has also invested an additional \$20 million into its Emporia facilities. In Junction City, the estimated 200 new positions will increase that plant's workforce to 375 by 2026.

COMMITMENT TO ACADEMIC EXCELLENCE

Academic Year 2023



No. 6

BEST COLLEGE FOR AGRICULTURAL SCIENCES IN AMERICA

(Niche.com, 2024)



No. 1

FRIENDLIEST STUDENTS

(Princeton Review, 2024)



TOP 10

COLLEGE TOWN

(American Institute for Economic Research, 2024)

98%

JOB PLACEMENT RATE

\$2.3 MILLION

COLLEGE-SPONSORED
SCHOLARSHIPS AND
FINANCIAL AID

12:1

STUDENT TO FACULTY
RATIO

16

MAJORS AND 16
MINORS

15

TEACHING UNITS
AND FARMS LOCATED
WITHIN 2 MILES OF
THE MANHATTAN
CAMPUS

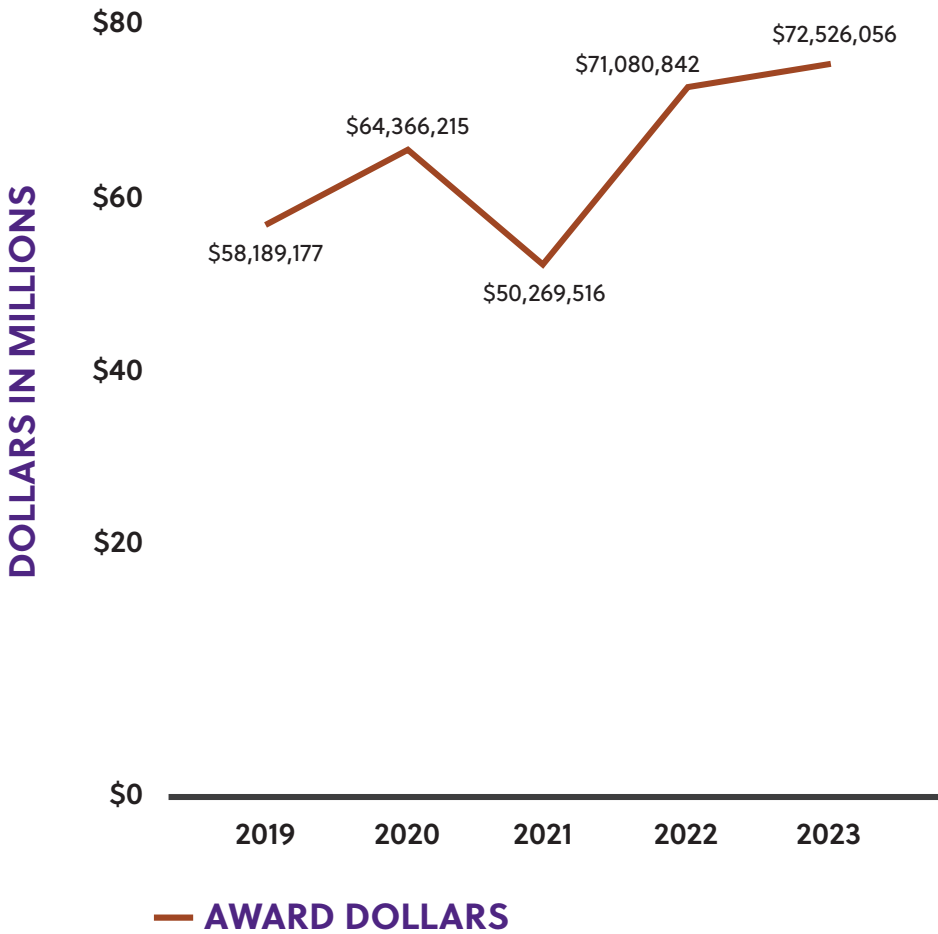
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DEGREES GRANTED

EXCELLENCE IN RESEARCH

Extramural awards

Extramural funding is the money that is awarded from outside the University and used to support a program or project. It typically comes from federal, state or local governments; businesses; private foundations; or individuals.



Research expenditures

Research expenditures are the funds spent to conduct research. The term refers to the nationally accepted method to measure research activities, since it showcases the amount of work that is accomplished and the impact to the economy when research funds are spent during a specific time period.





ENHANCING ENGAGEMENT THROUGH K-STATE 105

Since its inception, K-State Research and Extension has always been a partner to help Kansans build better lives, livelihoods and communities. For years, the organization has been focused on its four key program areas: family and consumer science, agriculture and natural resources, 4-H youth development and community development.

In 2023, its role expanded as part of the Next-Gen K-State strategic plan. K-State is embracing new and innovative ways to serve and connect with Kansans, and K-State Research and Extension plays a key role in a new initiative called K-State 105.

K-State 105 helps all 105 counties in Kansas in areas such as community vitality and business, entrepreneurial and workforce development, and other areas. The initiative is opening new doors and new engagement possibilities for K-State Research and Extension, too. K-State 105 is forging

connections and partnerships that create access to additional expertise within other state institutions and agencies, non-profits and higher education institutions.

"K-State 105 offers new opportunities to grow the Kansas economy and strengthen communities by providing the expertise needed to enhance a community's ability to improve their childcare, health care, housing, and other community infrastructure that supports economic growth," said Gregg Hadley, K-State's assistant vice president and director for extension.

Jessica Gnad, director of K-State 105, calls the initiative a key piece of becoming a next-generation land-grant university. K-State 105 is also a pillar of the university's Economic Prosperity Plan, which connects to Kansas Board of Regents' goals to show how Kansas institutions of higher education add economic prosperity in the state.

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K-State 105 adds another collaborative layer as we continue serving and helping people and communities across the Sunflower State.

Jessica Gnad
Director, K-State 105

— ” —

“K-State 105 is leveraging K-State Research and Extension’s presence in every county to deliver university innovation and economic prosperity to Kansans, right in their own communities,” Gnad said. “K-State Research and Extension has always been in every Kansas county and K-State 105 adds another collaborative layer as we continue serving and helping people and communities across the Sunflower State.”

In September 2023, K-State announced a partnership that illustrates how K-State 105 benefits Kansas communities. K-State 105 is helping to expand the Kansas Small Business Development Center, which operates as a network of eight regional economic development and business consulting centers that currently serve all 105 counties in the state.

The partnerships involve two universities — K-State and Fort Hays State University — as well as two K-State 105 partners — NetWork Kansas and the Innovation Center. This group estimates it will be able to serve 432

clients, help start 16 new businesses and conduct 60 capital transactions in fiscal year 2024.

“While the evolution of K-State and Cooperative Extension is exciting, some things will remain constant,” said Hadley. “K-State Research and Extension will still be making a difference in Kansans lives each day, in every community in Kansas.

“But through K-State 105 our agents and specialists will be able to deliver new opportunities that serve the communities, families, individuals and organizations where we work and live – as we always have.”

For more information about the K-State 105 Initiative visit k-state.edu/105/



OUR FUNDING SOURCES

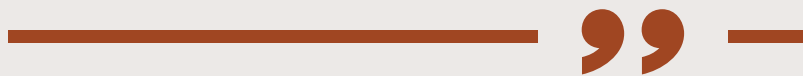
Fiscal Year 2024

AGRICULTURAL EXPERIMENT STATION	
State Appropriation	\$33,933,144
Federal Appropriation	4,500,000
Main Campus Allocation	252,800
Grants, Contracts, Other Funds	58,752,091
Total Agricultural Experiment Station	\$97,438,035
COOPERATIVE EXTENSION SERVICE	
State Appropriation (includes K-State 105)	\$26,791,512
Federal Appropriation	5,500,000
Grants, Contracts, Other Funds	16,716,376
County/District Appropriation	24,700,000
Total Cooperative Extension Service	\$73,707,888
Total K-State Research and Extension	\$171,145,922
COLLEGE OF AGRICULTURE	
State Appropriation and Tuition	\$11,548,064
Grants, Contracts, Other Funds	4,931,542
Total College of Agriculture	\$16,479,606
Total College of Agriculture and K-State Research and Extension	\$187,625,528



What's most exciting is this unique position Kansas State serves in the food and ag space that no other university across the globe can. It obviously starts with genetics and agronomy all the way through the manufacturing side.

*Troy Anderson
Vice President of Operations, Ardent Mills*



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Kansas State University Agricultural Experiment Station and Cooperative Extension Service

K-State Research and Extension is an equal opportunity provider and employer. Issued in furtherance of Cooperative Extension Work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Director of K-State Research and Extension, Kansas State University, County Extension Councils, Extension Districts.

RPT 111 | January 2024