

# **Kansas State University Combined Research and Extension Plan of Work 2020-2024**

**Status: Final  
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## **I. Plan Overview**

### **1. Executive Summary**

K-State Research and Extension (KSRE) is a statewide network of educators sharing unbiased, research-based information and expertise on issues important to Kansas. The KSRE network includes offices in all 105 counties, along with four regional extension offices, five agricultural research centers distributed throughout the state to encompass variability in climate and soils, four satellite units, four agronomy experiment fields and four horticulture centers and experiment fields. In addition, KSRE funds research projects in 20 departments across five colleges.

A unique feature within the K-State Research and Extension organization is the close alignment of research and extension. In 1996, K-State Research and Extension was formed by aligning the Kansas Agricultural Experiment Station and the Kansas Cooperative Extension Service. The strategic intent of this alignment was to achieve greater efficiency and synergy between discovery and outreach efforts. One ancillary benefit of this alignment is that basic and applied research lead to rapid Extension programming and application in the field. This alignment also allows more fluid compliance with multi-state and integrated components of AREERA.

K-State Research and Extension is focusing its efforts on five grand challenges that directly or indirectly affect all Kansans: Global Food Systems, Water, Health, Developing Tomorrow's Leaders, and Community Vitality. These grand challenges were determined through a series of meetings with stakeholders and define areas of emphasis for agents, specialists and researchers.

K-State Research and Extension cannot solve these challenges alone. KSRE's statewide presence lends itself to collaborative efforts with organizations, private business and industry, local groups, state and federal organizations, and colleagues in other states. Quality faculty draw businesses and funding to K-State and to Kansas including:

Several high-profile projects are under way in the Biosecurity Research Institute, and infrastructure development for the National Bio and Agro-Defense Facility.

Two partnerships created in the last five years provided new opportunities to focus on specific issues of rural communities. The Dane Hansen Foundation provided funding to hire a Community Vitality Specialist in Northwest Kansas. Kansas Masons pledged their support to Kansas communities by funding a second specialist for the Kansas PRIDE program.

Family and Consumer Sciences is a partner of the Kansas Department for Aging and Disability Services to provide health insurance education to Medicare eligible Kansans. Approximately 1/3 of the contacts are vulnerable beneficiaries with incomes below 150% of the poverty level.

The Kansas 4-H Foundation, the Department of 4-H Youth Development and KSRE partnered to provide grants to local programs to increase 4-H membership, reach new and underserved audiences and incorporate STEM programs and activities.

K-State - in partnership with four other universities and several industry partners have joined efforts to create the Irrigation Innovation Consortium, a collaborative research effort to accelerate the development and adoption of efficient irrigation technologies and practices.

The Culture of Health initiative was created to facilitate community conversations around the state about health. A goal of the community conversations is to bring about engaged, collaborative initiatives that address a significant public need through community partnership and coalitions.

The demographics of Kansas continue to change. KSRE is reaching out to both underserved and traditional audiences through new venues. To increase multicultural competency and sensitivity among our workforce, the College of Agriculture/KSRE Diversity Programs Office provides regular Navigating Difference training for new Extension professionals. This goal of this program is to bring systemic change and diversity to the KSRE team and provide cultural competency awareness and skills that they can practically apply in their day to day work. Other efforts include:

The Multicultural Undergraduate and Graduate Summer Research Fellowship program targets under-represented populations of students with the goal to establish networking relationships back to their respective home institutions, as well as K-State faculty. This program has a specific goal of growing the minority populations of students within graduate programs in the College of Agriculture and across other partner Colleges represented within K-State Research and Extension.

Kansas 4-H developed new partnerships to reach new and underserved youth with Boys and Girls Club in Northeast Kansas which resulted in the development of a summer program that included weekly activities in science, technology, engineering and math for Native American youth in the Iowa Tribe of Kansas and Nebraska and the Kickapoo Tribe in Kansas. Another partnership with the College of Education resulted in a two-day residential camp for middle school students to promote college access for first-generation youth from underrepresented populations.

## 2. FTE Estimates

Year	1862 Extension	1862 Research
2020	381.0	276.0
2021	381.0	276.0
2022	381.0	276.0
2023	381.0	276.0
2024	381.0	276.0

## II. Merit / Peer Review Process

At the local level, extension agents work with Program Development Committee (PDC) members - local volunteers - who provide input in determining the local and statewide efforts needed to address social, economic, and environmental concerns. Information is then shared with the appropriate statewide Program Focus Team (PFT) - a team of agents and specialists that work together to develop a series of educational program activities that agents can use in their community. Educational action plans are submitted to the local extension council and KSRE Program Leaders for approval.

Research that is proposed by scientists supported by the KAES is reviewed internally by a process overseen by the KAES director. The review process may include disciplinary colleagues, academic department heads and the associate director. In general, capacity projects describe areas of work to be investigated and these areas are reviewed for scientific merit and for their relevance to the priorities of Kansas and USDA/NIFA. Priorities for the state are verified by the relationship of areas of investigation for their relevance to the Kansas agricultural and rural economy, or the potential for the area of investigation to become a relevant factor in the state's food and agricultural economy or to improve the lives of citizens of Kansas. Part of the review process includes confirmation of the audience of interest and consistency of the knowledge areas defined by NIFA with the priorities of the state.

For multi-state projects with contributions from KAES scientists, project objectives and approaches are identified by the membership of the committee. Renewing and new projects are first reviewed by the administrative advisor to the multi-state research committee and then by the regional multi-state review committee. The chair of the regional committee provides feedback to the project writing team. The writing team, in turn, considers the input and makes changes to the proposal as appropriate for improvement and clarity.

## III. Stakeholder Input

### 1. Actions to Seek

Engage board and advisory committee members at the local level to provide input into program priorities. The Kansas Cooperative Extension Service law dictates election/appointment of local advisory councils and an executive board in each of our counties and districts. This amounts to more than 2,500 individuals across the state to help determine program priorities.

Encourage local board members to participate in the State Extension Advisory Council -- a consultative group to the Director of Extension on relevant issues and opportunities facing Extension

Utilize regional advisory committees for research and extension composed of stakeholder groups and clientele from the local area to discuss collaborative efforts, sharing of resources, prioritization processes, progress reports and development of complementary educational efforts. Feedback examples include commodity commissions (e.g., deliberations that help prioritize the awarding of producer-funded extramural grants involving check-off dollars) and helping citizens to understand options associated with regulatory decisions made by the EPA, Kansas Department of Health and Environment, Kansas Department of Agriculture, and other groups.

Meet regularly with the state advisory group for the Director of K-State Research and Extension and Dean of the College of Agriculture. Members are carefully nominated based upon the target audience represented, gender, race, ethnicity and leadership. Members are invited to provide advice to on key initiatives to strengthen the programs in research, extension and teaching.

## **2. Methods to Identify**

Encourage diverse representation on advisory boards taking into consideration target audience, gender, race, ethnicity and leadership

Follow Kansas County Extension Law for electing board and advisory committee members. Encourage local units to consider identifying and recruiting members that reflect the community's make-up.

Engage representatives from stakeholder groups

## **3. Methods to Collect**

Conduct needs assessments

Organize listening sessions

Utilize advisory committees

Meet with traditional stakeholder groups

Meet with the general public

#### **4. How Considered**

Identify emerging issues

Redirect extension programs

Redirect research programs

Development of statewide action plans

Determine program priorities

### **IV. Critical Issues**

#### **1 Global Food Systems**

##### **Description:**

As the state's largest employer, agriculture drives the Kansas economy. 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 percent of the entire workforce. We are improving food and agricultural systems to feed the world's growing population, which will economically benefit Kansas

To feed and sustain a growing population, K-State Research and Extension is focused on developing innovative practices 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. Projects and programs would include: Developing and testing new crop, vegetable, and tree varieties; Reducing food waste caused by insects, poor storage, and processing techniques; Creating sustainable agricultural systems that intensify productivity; Identifying ways to maintain cattle rangeland threatened by variations in climate; Leading national and international teams to solve global food issues; Helping families stretch their food dollars.

**Term:** Long

## **Science Emphasis Areas**

Environmental Systems  
Family & Consumer Sciences  
Food Safety  
Sustainable Agricultural Production Systems

## **2 Water**

### **Description:**

Water quality in central and eastern Kansas and water quantity in western Kansas are important issues. Current irrigation trends could deplete 69 percent of the groundwater in the Ogallala Aquifer within 50 years, drastically affecting the Kansas economy. Sediment and silt are washing into large reservoirs that supply drinking water and recreation to many Kansans.

To ensure future generations have a reliable source of clean water, our focus will be to develop and implement programs to 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.

Projects and programs would include:

Breeding new drought-tolerant crop varieties that can be used for human and pet food, livestock feed, and fuel.  
Developing more efficient irrigation and water monitoring systems for home and farm use.  
Reducing runoff and sedimentation into reservoirs.  
Improving livestock genetics to increase feeding efficiency, which reduces feed and water needs.  
Working with the State of Kansas and partnering with stakeholders to implement strategies identified in the 50-year Vision for the Future of Water Plan.

**Term:** Long

## **Science Emphasis Areas**

Agroclimate Science  
Environmental Systems  
Family & Consumer Sciences  
Sustainable Agricultural Production Systems

## **3 Health**

### **Description:**

Thirty-five percent of Kansas adults are obese, and 16.7 percent of Kansas children live in poverty. Targeting the diversity of Kansans, our programs address quality of life, healthy development and healthy behaviors across life stages for all socioeconomic groups. Projects and programs would include:

Identifying and implementing practices to help prevent adult and childhood obesity  
Providing options to help families and practitioners understand health-care choices for elderly Kansans.  
Sharing unbiased information about national changes in health insurance requirements.  
Educating consumers on safe food handling with food preparation, food preservation, food service and more.

**Term:** Long

**Science Emphasis Areas**

Family & Consumer Sciences  
Food Safety  
Human Nutrition  
Youth Development

**4 Community Vitality**

**Description:**

Kansas communities face many challenges that demand leadership in an arena of increasing complexity and contention. Research indicates that building community leadership capacity is critical to community viability and sustainability (Flora and Flora, 2008; Green and Haines, 2008). Residents who are connected and invested in their local community are more likely to connect to their community throughout life. KSRE will work to help citizens and communities - whether rural, suburban or urban - grow and prosper. Projects and programs would include:

Helping communities of all sizes maintain necessary services, such as grocery stores, that hire locally and generate local sales tax.

Working directly with farmers, ranchers and families to develop better financial management practices.

Engaging community groups and local businesses by providing leadership, research-based expertise and technical assistance to make communities better places to live and work.

**Term:** Long

**Science Emphasis Areas**

Family & Consumer Sciences  
Sustainable Agricultural Production Systems  
Youth Development

**5 Developing Tomorrow's Leaders**

**Description:**

The complex global society of the future will require leaders with effective teamwork and communication skills. We need to prepare leaders of all ages, so they may contribute to a vibrant Kansas economy for years to come. Projects and programs would include:

Establishing a national model for bringing ethnically diverse families to 4-H

Adding value to the economy, 4-H members are twice as likely to attend college and pursue careers in science, engineering and computer technology.

Meeting the needs of military youth and their families at Kansas military installations and families of deployed members of the National Guard and Army Reserve

Training Kansans of all ages to be better citizens and leaders.

**Term:** Long

**Science Emphasis Areas**

Family & Consumer Sciences  
Youth Development