

# 2010 Kansas State University Combined Research and Extension Plan of Work

**Status: Accepted**  
**Date Accepted: 07/30/09**

## I. Plan Overview

### 1. Brief Summary about Plan Of Work

The motto of K-State Research and Extension is Knowledge for Life. This is a great motto for a land-grant university, such as Kansas State University. It means developing new knowledge and empowering people with that knowledge, whether they are our youth and 4-H clubs or our senior citizens. In order to accomplish this as we prepare for a new planning cycle, K-State Research and Extension is focusing its efforts on four planned programs: Competitive Agricultural Systems; Safe Food and Human Nutrition; Natural Resources and Environmental Management; and Healthy Communities: Youth, Adults, and Families.

We cannot be everything to everyone; therefore, we have to focus on serving the highest priorities. Obviously, this also requires that we have the breadth to address other issues. Whether we develop the knowledge within K-State Research and Extension or work with another land-grant university or an industry partner to develop that knowledge, we must disseminate that knowledge on the K-State campus and the informal classrooms in all 105 counties across the state of Kansas. 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 (KSRE) 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.

Within the four planned programs, each of seven strategic opportunities identifies a broad issue that is being addressed, the research foundation associated with it, and changes that will be measured over time. The strategic opportunities define areas of emphasis for agents, specialists, and researchers. Estimating FTEs/SYs across federal, state, and county funding sources, due to budget reductions the number of positions will decrease. Anticipated mid-year reductions also will affect this plan. Planned programs are mostly state supported and through grant funds, also extensively reported through CRIS and the granting agencies.

### Estimated Number of Professional FTEs/SYs total in the State.

Year	Extension		Research	
	1862	1890	1862	1890
2010	400.0	0.0	255.0	0.0
2011	400.0	0.0	255.0	0.0
2012	400.0	0.0	255.0	0.0
2013	400.0	0.0	255.0	0.0
2014	400.0	0.0	255.0	0.0

## II. Merit Review Process

### 1. The Merit Review Process that will be Employed during the 5-Year POW Cycle

- Internal University Panel
- Combined External and Internal University Panel
- Expert Peer Review

## 2. Brief Explanation

Scientific peer review and merit review of all K-State Research and Extension Action Plan proposals will be accomplished by experts with scientific knowledge and technical skills to evaluate the quality and relevance to program goals. This includes projects funded by Hatch Multistate Research Funds, Hatch Funds, Smith-Lever, and state appropriated funds. The Associate Director of Research and/or the Associate Director of Extension select three peer reviewers on campus for specific proposals in consultation with department heads to identify reviewers with appropriate expertise. The plans are also reviewed by a panel of department heads, the associate directors of research and extension, assistant directors (Ag and Natural Resources, 4-H and Youth programs, Family and Consumer Sciences), as well as area directors. The agreement and acceptance within the team and the review by unit leaders and administrators, as well as peer reviewers assures that action plans adequately and appropriately address the issues. Several representative stakeholders will be invited to participate in the annual team meetings as well. The review asks for an evaluation of the following points: overall appropriateness to K-State Research and Extension core mission themes and long-term intended outcomes; the investigators' grasp of the literature including a review of the most significant published work in the field; and a description of the current status of science in the area of the proposal. Also, do the objectives show a specific relationship to the improvement of Kansas agriculture and societal issues? Does the description of the project identify in non-technical language the methods or actions to be utilized in carrying out the proposed project? Do the methods relate to accomplishing each stated objective and are the methods stated clearly? A recommendation of approval or disapproval should be included in the review. A form is used to guide reviewers through the peer review process.

## III. Evaluation of Multis & Joint Activities

### 1. How will the planned programs address the critical issues of strategic importance, including those identified by the stakeholders?

The programs and research activities that are planned represent the culmination of an extensive process of incorporating stakeholder input. Additionally, the planning process involved through vetting against extension and research priorities reported from USDA, CSREES, and ARS as well as through commodity-based organizations. Faculty groups interact continually with external groups of agencies, organizations, and citizens to gain stakeholder feedback that has helped these efforts in terms of relevance, support, and understanding. All of this input has been utilized to focus the upcoming five year plan for K-State Research and Extension.

### 2. How will the planned programs address the needs of under-served and under-represented populations of the State(s)?

An emerging and growing effort within K-State Research and Extension is a summer research program specifically targeting under-represented populations of students to establish networking relationships back to their respective home institutions. Although the undergraduate institutions of these students have not exclusively been from 1890 Land Grants, those institutions have heavily dominated the applicant pool to date. This program places these students in a laboratory or field setting with a K-State Research and Extension scientist to work on a very focused set of research goals that can be accomplished in the 8 week program. 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. These programs are, of course, funded in part by funds originating in the Kansas Agricultural Experiment Station and College of Agriculture Dean's Office and they are designed ultimately to grow the representation of these students in academic and industry fields to diversify the workforce in areas traditionally dominated by majority races and genders. Additional activities that continue were reported in the previous Plan of Work. In brief, K-State Research and Extension continues to be involved in programs addressing the needs of economically disadvantaged agricultural producers, youths, families, and communities and provide knowledge, skills, and practices where needs are great. These include programs targeting military families in and around Fort Riley; Latino and other Spanish-speaking residents, primarily in Wyandotte County; and Family Nutrition Program (FNP) that targets low income and ethnically diverse populations.

### 3. How will the planned programs describe the expected outcomes and impacts?

The next five year planning process for K-State Research and Extension continues to be ongoing. Within our four planned programs, the plan currently includes seven so-called strategic opportunities. Those opportunities are as follows: Sustain Profitable Agricultural Production Systems; Prepare People in Kansas to Thrive in a Global Society and All Aspects of Life; Ensure an Abundant and Safe Food Supply for All; Enhance Effective Decision-making Regarding Environmental Stewardship; Assist Communities in Becoming Sustainable and Resilient to the Uncertainties of Economics, Weather, Health, and Security; and Create Opportunities and Support People in Kansas to Improve Their Physical, Mental, and Emotional Health and Well-Being. The seventh, Identify Pathways for Efficient and Sustainable Energy Use, is still under development. Detailed expected outcomes and impacts are developing within each strategic opportunity.

#### 4. How will the planned programs result in improved program effectiveness and/or efficiency?

K-State Research and Extension supports a diverse portfolio of research and extension programming efforts. These programs cross broad discipline areas and include on-campus faculty that represent five academic colleges. For this reason, there is obvious need for program planning to help avoid mission drift away from programs that are more central to key programs impacting economic drivers and the lives of citizens of the state of Kansas. Therefore, it is expected that the planned programs will continue to foster focus on the most critical issues. In most programs, the results of extension education provide guidance to the research agenda and extension education is research-based. Extension activities with the public will identify areas of knowledge that lack research information. This void of research information is utilized by researchers to guide future investigations.

### IV. Stakeholder Input

#### 1. Actions taken to seek stakeholder input that encourages their participation

- Survey of traditional stakeholder groups
- Survey of selected individuals from the general public

##### Brief explanation.

In 2008, K-State Research and Extension has undergone identification of the strategic opportunities for our combined research and extension initiatives for the coming year. A team worked to put together a series of strategic statements. Those statements were distributed in a survey form to our stakeholders across Kansas using the local Extension unit network. Surveys were returned and a hierarchy of feedback has resulted in on-going work towards identifying the key research and extension program initiatives that align well with the priorities indicated with the survey. Budget resources will follow those priorities.

#### 2(A). A brief statement of the process that will be used by the recipient institution to identify individuals and groups stakeholders and to collect input from them

##### 1. Method to identify individuals and groups

- Use Surveys
- Use Advisory Committees

##### Brief explanation.

Stakeholder input will come through external advisory councils, elected officials, strategic planning, and program review processes. At the local level, the Kansas Cooperative Extension Service law dictates election of local advisories and an executive board in each of our 105 counties. This amounts to publicly electing 2,520 individuals across the state. Of those, 945 are further elected to executive boards and are required by law to oversee the program, staff, and budget of our local Extension units across Kansas. On a regional level, our research and extension centers make use of advisory committees composed of stakeholder leadership and clientele from the local area. During the year we also meet informally with a large number of diverse organizations to discuss collaborative efforts, consider sharing of resources, review prioritization process, assess progress reports and realized outcomes, and to design 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.

#### 2(B). A brief statement of the process that will be used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them

##### 1. Methods for collecting Stakeholder Input

- Survey specifically with non-traditional individuals
- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder individuals
- Survey of selected individuals from the general public

##### Brief explanation

Early in 2009, a survey was completed with the program development committee members across the state (2500 stakeholders). We asked these stakeholders to reflect on their input through a cross-section of the demographics of their respective communities. An annual survey of family and consumer sciences program interests is conducted with specific instruction to take the surveys to individuals who do represent the diverse demographics of the local communities. Extension

agents invite broader stakeholder groups into planning sessions to establish local issues, needs, and program priorities.

### 3. A statement of how the input will be considered

- To Set Priorities
- To Identify Emerging Issues
- Redirect Extension Programs
- Redirect Research Programs
- In the Action Plans

#### **Brief explanation.**

The purpose of the planning process toward an identified set of strategic opportunities for research and extension was to identify and give attention to these initiatives to assure a relevant, sustainable, quality Extension Service in Kansas for the future. The stakeholder input process is a comprehensive effort to focus on critical issues and problems needing research and seek answers that fit well within our defined mission priorities. This input continues throughout planning, project implementation, and program delivery. Of the 2520 publicly elected according to Kansas Extension law, 945 are further elected to executive boards and are required by law to oversee the program, staff, and budget of our local Extension units across Kansas.

## V. Planned Program Table of Content

S. NO.	PROGRAM NAME
1	Competitive Agricultural Systems
2	Safe Food and Human Nutrition
3	Natural Resources and Environmental Management
4	Healthy Communities: Youth, Adults and Families

**V(A). Planned Program (Summary)**

**Program #1**

**1. Name of the Planned Program**

Competitive Agricultural Systems

**2. Brief summary about Planned Program**

Interest in and commitment to the ability to sustain profitable agricultural production systems continues to guide K-State Research and Extension to: Develop animal and crop production systems that thrive in the variable conditions of the Great Plains; develop horticulture, forestry, and alternative green enterprises that thrive in the variable conditions of the Great Plains; advance new and improved systems of agricultural production that meet the needs of producers and consumers; enhance the value of agricultural products; enhance knowledge and skills about efficient energy practices; identify and assess opportunities for economic development through alternative energy; and increase science-based knowledge on energy resources and technologies.

**3. Program existence :** Mature (More than five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** No

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms	5%		10%	
205	Plant Management Systems	29%		14%	
216	Integrated Pest Management Systems	5%		10%	
307	Animal Production Management Systems	37%		19%	
311	Animal Diseases	0%		24%	
501	New and Improved Food Processing Technologies	2%		2%	
502	New and Improved Food Products	0%		1%	
511	New and Improved Non-Food Products and Processes	2%		1%	
601	Economics of Agricultural Production and Farm Management	19%		14%	
603	Market Economics	1%		0%	
606	International Trade and Development	0%		5%	
	<b>Total</b>	100%		100%	

### V(C). Planned Program (Situation and Scope)

#### 1. Situation and priorities

• Agriculture plays a very significant role in the Kansas economy. Of the total cash receipts from agriculture in recent years, approximately two-thirds of those receipts were derived from livestock and their associated products. The state ranks third in number of cattle on feed, number of cattle processed, and total beef production; ninth in hogs on farms, 10th in market sheep and lambs, 18th in milk produced and in sheep and lambs on farms, and 19th in meat and other goats. Kansas has one of the fastest growing dairy industries in the nation (60% production increase since 1998) with new annual product sales that exceed \$80 million. Producing 450,000,000 pounds of pork, (1.65 million head), Kansas ranks 9th in state swine production with 310 operations producing 95% of the state's pork. • Kansas farmers produce approximately 22 million acres of wheat, corn, grain sorghum, soybeans, sunflowers, and alfalfa each year, generating about \$3 billion of revenue. Flour milling and livestock production have traditionally multiplied the value of crops produced. Recent construction of fuel ethanol plants in many communities has also added to that multiplier. In addition, perennial forage resources in Kansas consist of about 17 million

acres of rangeland and 2.3 million acres of tame pasture. The diverse and often harsh Kansas environment presents a series of challenging, high risk decisions for those producing grain and forage crops and managing range and pasture land. • Kansas also has a diverse and growing horticultural industry composed of turf grasses (golf courses, lawns, and roadways), floral crops, ornamentals, nursery businesses and fruit, nut, and vegetable production. More than 788,000 acres in Kansas are involved in horticulture activities, more than double the acres reported in 2000. The value of all horticultural products in the state continues to increase and presently exceeds \$1 billion annually. • The Bioprocessing and Industrial Value Added Program (BIVAP) facility provides a means for research and incubation of novel product industry. The industrial value-added product group develops and improves technologies that utilize agricultural raw materials available in Kansas to produce higher value products. The fiber and textile program focuses on the development of industrial value-added materials and products made from natural and manufactured fibers that are essential to human health, safety and comfort, and contribute to local and national economies. • This is a unique opportunity for agriculture to provide solutions that help provide independence from foreign energy suppliers, invigorate our rural economy, and improve national security. However, additional research is needed to improve the efficiencies for bioconversion. Once improved technologies are established, we can provide ongoing technical outreach to assure that the newest developments are applied in this rapidly advancing industry.

**2. Scope of the Program**

- In-State Extension
- Multistate Research
- Multistate Integrated Research and Extension
- In-State Research
- Multistate Extension
- Integrated Research and Extension

**V(D). Planned Program (Assumptions and Goals)**

**1. Assumptions made for the Program**

Profitability is critical for long-term business survival; however, because agriculture is so dynamic (e.g., markets, technology, policy) producers need to constantly evaluate what enterprises and productions systems are the most profitable. In addition, agriculture is very capital intensive and producers need to identify the most efficient ways to access capital (e.g., lease versus buy land, own machinery versus custom hire).

Finite petroleum resources must be replaced by bio-based resources for production of many of our product and energy needs. A key area of research is learning how to better utilize the cellulosic components of our bio-based resources.

**2. Ultimate goal(s) of this Program**

- Sustainable Profitable Agricultural Production Systems;
- Pathways for Efficient and Sustainable Energy Use (under development)

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2010	108.0	0.0	175.0	0.0
2011	108.0	0.0	175.0	0.0
2012	108.0	0.0	175.0	0.0
2013	108.0	0.0	175.0	0.0
2014	108.0	0.0	175.0	0.0



**V(F). Planned Program (Activity)**

**1. Activity for the Program**

• Evaluate and develop technologies and production strategies that will enhance production efficiencies and industry profitability. • Assist producers in improving the economic efficiency of crop and livestock production enterprises and the marketing of products through research and educational programs. • Evaluate and develop technologies and production strategies that will enhance production efficiencies and industry profitability. • Conduct research to improve productivity, reduce costs, reduce nutrient output on livestock waste, improve profitability, and increase production of safe, wholesome, and nutritious products. • Increase producers understanding of their role in producing a wholesome, safe food product. • Improve the yielding ability and quality of the agronomic crops uniquely adapted to Kansas and the Central Plains, through plant breeding and genetics. • Develop integrated, sustainable cropping systems, which will enhance the intensity, diversity and profitability of crop production. • Improve resource use efficiency (water, soil and inputs) within diverse and sustainable cropping systems. • Enhance the development of the horticulture industry in Kansas. Manage afforestation and reforestation of Kansas to promote biodiversity, wildlife habitat and forest products. • Contribute to the development of extensive and intensive animal production and management systems that are economically viable, ecologically sustainable, and compatible with safe and humane treatment of animals. • Conduct applied research and educational programs, which will assist managers in assessing risk and developing risk management strategies for their farm, ranch, or agribusiness. • Provide educational programs that assist farm managers in addressing key and emerging issues in the agricultural production sector. • Develop decision support systems to meet the needs of large- and small-scale farmers and agribusinesses. • Conduct applied research and educational programs, which will assist agribusiness managers, including producer-owned cooperatives, improve the profitability and sustainability of their businesses. • Provide one-on-one financial, economic and farm business planning and management assistance through the Kansas Farm Management Association program. • Provide tools and education for improved farm-level record keeping and analysis, including whole-farm and enterprise analysis and benchmarking. • Develop tools and educational programs to assist producer groups in evaluating bio-fuel alternatives. • Develop and disseminate economic-based information that will facilitate business development focused on value-added marketing and processing of agricultural products. • Increase awareness of value of biobased products in the commercial marketplace. • Develop new processes to modify agricultural-based materials into higher value products. • Assess constraints and value opportunities for Kansas agricultural goods. • Increase food variety and value by developing new and enhanced food products.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Other 1 (Field Days, Tours)</li> <li>● Workshop</li> <li>● One-on-One Intervention</li> <li>● Other 2 (Proprietary tech dev &amp; licensing)</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites</li> <li>● Other 2 (Research publications)</li> <li>● Other 1 (Extension publications)</li> </ul>

**3. Description of targeted audience**

Farm and ranch managers; agricultural producers and agribusinesses throughout the food industry supply chain with emphasis on producers who want to help themselves; people who influence producers and producer decisions, including educators (veterinarians, media, industry organizations, packers/purchasers); government agencies/ regulators; the lending industry; and policy makers. Growing industry based on bioprocessing and bioconversion, including the existing ethanol and biofuels industry. International grain processors; industrial products manufacturers: adhesives, composites, bio-based chemicals, solvents, and lubricants. Entrepreneurs and investors seeking to enter this industry.

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2010	10000	0	1000	0
2011	10000	0	1000	0
2012	10000	0	1000	0
2013	10000	0	1000	0
2014	10000	0	1000	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

**2010 :3                      2011 :3                      2012 :3                      2013 :3                      2014 :3**

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2010	25	15	0
2011	25	15	0
2012	25	15	0
2013	25	15	0
2014	25	15	0

**V(H). State Defined Outputs**

**1. Output Target**

- Number of individuals participating in programs

**2010 :10000                      2011 :10000                      2012 :10000                      2013 :10000                      2014 :12000**

- Number of new/improved varieties, inbreds, germplasm developed and released

**2010 :3                      2011 :3                      2012 :3                      2013 :3                      2014 :4**

- Number of educational events (e.g., meetings, demonstrations, field days, press releases, and distributed publications) delivered

**2010 :650                      2011 :650                      2012 :650                      2013 :700                      2014 :700**

- Number of producers engaged in one-on-one consultations through Kansas Farm Management Association or Farm Analyst programs

**2010 :3000                      2011 :3000                      2012 :3000                      2013 :3000                      2014 :3000**

- Number of presentations at national and international conferences

**2010 :15                      2011 :15                      2012 :15                      2013 :15                      2014 :15**

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Number of participating livestock producers who demonstrate best management practices (BMPs) in regard to management and production, including genetic selection, reproduction, nutrition, health, animal care and well-being, livestock safety and quality, environmental management, and optimal marketing strategies
2	Number of Kansas farms and ranches increasing awareness of financial performance
3	Number of acres planted to KAES-developed materials or materials derived from KSU varieties, inbreds, or germplasm
4	Number of crop acres using soil testing as a basis for nutrient applications
5	Percent of producers demonstrating improvement of Kansas ground and surface water with respect to nutrient loads
6	Number of soil samples evaluated on Kansas crop acreage
7	Changes in average or typical observed cropping systems, rotations, and crops
8	Hours and activities reported annually by Master Gardener volunteers
9	Number of new processes to improve utilization of biological raw materials as bioconversion substrates
10	Number of participating cow/calf producers who lower cow feed supplement costs through use of BRaNDS software to make informed, cost-effective purchase decisions.

**Outcome #1****1. Outcome Target**

Number of participating livestock producers who demonstrate best management practices (BMPs) in regard to management and production, including genetic selection, reproduction, nutrition, health, animal care and well-being, livestock safety and quality, environmental management, and optimal marketing strategies

**2. Outcome Type :** Change in Condition Outcome Measure

**2010** :700                      **2011** : 700                      **2012** : 700                      **2013** :700                      **2014** :700

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 307 - Animal Production Management Systems
- 601 - Economics of Agricultural Production and Farm Management

**Outcome #2****1. Outcome Target**

Number of Kansas farms and ranches increasing awareness of financial performance

**2. Outcome Type :** Change in Condition Outcome Measure

**2010** :3000                      **2011** : 3000                      **2012** : 3000                      **2013** :3000                      **2014** :3000

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 601 - Economics of Agricultural Production and Farm Management

**Outcome #3****1. Outcome Target**

Number of acres planted to KAES-developed materials or materials derived from KSU varieties, inbreds, or germplasm

**2. Outcome Type :** Change in Condition Outcome Measure

**2010** :6500000                      **2011** : 6500000                      **2012** : 7000000                      **2013** :7000000                      **2014** :7000000

**3. Associated Institute Type(s)**

- 1862 Research

**4. Associated Knowledge Area(s)**

- 201 - Plant Genome, Genetics, and Genetic Mechanisms

**Outcome #4****1. Outcome Target**

Number of crop acres using soil testing as a basis for nutrient applications

**2. Outcome Type :** Change in Condition Outcome Measure

**2010** :4000000                      **2011** : 4000000                      **2012** : 4000000                      **2013** :4000000                      **2014** :4000000

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 205 - Plant Management Systems

**Outcome #5**

**1. Outcome Target**

Percent of producers demonstrating improvement of Kansas ground and surface water with respect to nutrient loads

**2. Outcome Type :** Change in Condition Outcome Measure

**2010 5                      2011 : 5                      2012 : 5                      2013 5                      2014 :5**

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 205 - Plant Management Systems

**Outcome #6**

**1. Outcome Target**

Number of soil samples evaluated on Kansas crop acreage

**2. Outcome Type :** Change in Action Outcome Measure

**2010 :13000                      2011 : 13000                      2012 : 13000                      2013 :13000                      2014 :13000**

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 205 - Plant Management Systems
- 601 - Economics of Agricultural Production and Farm Management

**Outcome #7**

**1. Outcome Target**

Changes in average or typical observed cropping systems, rotations, and crops

**2. Outcome Type :** Change in Action Outcome Measure

**2010 5                      2011 : 5                      2012 : 5                      2013 5                      2014 :5**

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 205 - Plant Management Systems
- 601 - Economics of Agricultural Production and Farm Management

**Outcome #8**

**1. Outcome Target**

Hours and activities reported annually by Master Gardener volunteers

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2010 85000                      2011 : 85000                      2012 : 85000                      2013 90000                      2014 :90000**

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 205 - Plant Management Systems

**Outcome #9**

**1. Outcome Target**

Number of new processes to improve utilization of biological raw materials as bioconversion substrates

**2. Outcome Type :** Change in Action Outcome Measure

2010 :1                      2011 : 1                      2012 : 1                      2013 : 2                      2014 :2

**3. Associated Institute Type(s)**

- 1862 Research

**4. Associated Knowledge Area(s)**

- 511 - New and Improved Non-Food Products and Processes

**Outcome #10**

**1. Outcome Target**

Number of participating cow/calf producers who lower cow feed supplement costs through use of BRaND\$ software to make informed, cost-effective purchase decisions.

**2. Outcome Type :** Change in Action Outcome Measure

2010 :450                      2011 : 450                      2012 : 0                      2013 : 0                      2014 :0

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 307 - Animal Production Management Systems
- 601 - Economics of Agricultural Production and Farm Management

**V(J). Planned Program (External Factors)**

**1. External Factors which may affect Outcomes**

- Competing Public priorities
- Natural Disasters (drought,weather extremes,etc.)
- Government Regulations
- Economy
- Competing Programmatic Challenges
- Other (Technological change)
- Appropriations changes
- Public Policy changes

**Description**

From past experience, any or all of these factors can significantly impact outcomes of this planned program.

**V(K). Planned Program (Evaluation Studies and Data Collection)**

**1. Evaluation Studies Planned**

- Before-After (before and after program)
- During (during program)
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Retrospective (post program)

**Description**

A combination of the planned studies will provide the most useful and comprehensive results.

**2. Data Collection Methods**

- Observation
- Sampling
- On-Site

**Description**

Selected methods are self-explanatory. For value-added, data collection will be mostly on-site as new plants are built, rural economies expand, and new licenses are applied. Other metrics will be extramural funding, industry partners, patents, licenses, publications, presentations at national/international meetings.

**V(A). Planned Program (Summary)**

**Program #2**

**1. Name of the Planned Program**

Safe Food and Human Nutrition

**2. Brief summary about Planned Program**

Concern about ensuring an abundant and safe food supply continues to guide K-State Research and Extension (KSRE) to develop programs that: Improve access to high quality foods (including local foods), especially for consumers with limited resources; enhance the safety of our food supply by reducing or eliminating hazards from food production to consumption; and improve protection and defense strategies to safeguard the food supply; and promote healthy eating in children, youth, and adults.

KSRE has a rich history of working with pre-harvest (animal and plant production) and post-harvest (food microbiology and toxicology) issues that impact food safety. Many of the pre- and post-harvest food safety issues can impact human health, whereas others may impact our agricultural infrastructure, food supply, and economy. Food safety research, teaching, and extension efforts have put K-State Research and Extension in a strong position to address this new era of food security.

**3. Program existence :** Mature (More than five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** No

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**



KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
702	Requirements and Function of Nutrients and Other Food Components	15%		15%	
703	Nutrition Education and Behavior	30%		20%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources.	15%		15%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	30%		30%	
723	Hazards to Human Health and Safety	0%		10%	
724	Healthy Lifestyle	10%		0%	
802	Human Development and Family Well-Being	0%		10%	
	<b>Total</b>	100%		100%	

### V(C). Planned Program (Situation and Scope)

#### 1. Situation and priorities

Public awareness of food safety has been increasing due to recent nationwide outbreaks and attention given to the outbreaks of Salmonella Typhimurium in peanuts/peanut butter and E. coli O157:H7 associated with fresh spinach. The threat of bioterrorism on the safety of the food supply is also a public concern. There are an estimated 76 million cases of foodborne disease (illness) each year in the U.S., resulting in about 325,000 hospitalizations and 5,000 deaths. The most severe cases tend to occur in the very old, the very young, those who have an illness already that reduces their immune system function, and in healthy people exposed to a very high dose of an organism. The increase in the consumer food dollar being spent on foods prepared outside the home, would support the need for food safety education programs targeting foodservice operations, (e.g., restaurants, schools, hospitals, care home, childcare centers, grocery stores).

The Kansas Department of Health and Environment, Office of Surveillance & Epidemiology reported 20 foodborne outbreaks and 1271 foodborne cases in 2007. Most cases of foodborne illness can be prevented through proper hygiene practices like hand washing and by following proper food handling and preparation recommendations. There is an increased interest in locally grown foods and home food preservation among Kansas residents. These trends will require additional food safety education relevant to these practices. In the 2007-2008, K-State Research and Extension Family and Consumer Science Program Survey of 2065 Kansas citizens, 83.4% indicated that handling food safely at home was important; 76% identified preserving food safely at home as important. This same survey indicated that 74.1% of the respondents stated that keeping food safe when eating out (restaurants) was important. The March 2009, KSRE PDC Strategic Opportunities Survey (564 county PDC members), showed that 86% of the respondents indicated that enhancing the safety of the food supply was important or somewhat important.

Current data on household food insecurity and hunger across the U.S. and Kansas show that, while national levels of food insecurity and hunger did not change significantly in 2007, food insecurity rates in Kansas continued to rise. Rates of household food insecurity in Kansas in 2005-2007 (a period of economic growth) were 2% higher than national rates.

Access to high-quality local foods has been determined to positively affect consumers' diets, particularly the intake of fresh fruits and vegetables in young families and seniors with limited resources. Though Kansas enjoys nearly 100 farmers markets

statewide, fewer than 10 support even one program or effort designed as food aid measures (i.e., WIC, electronic benefit transfers, or the Senior Farmers Market Nutrition Program). High quality foods may be accessible to many Kansans, but are less likely available to those with limited resources.

**2. Scope of the Program**

- Multistate Extension
- In-State Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

**V(D). Planned Program (Assumptions and Goals)**

**1. Assumptions made for the Program**

New emerging issues and pathogens derailing set program; lack of resources: financial and personnel; ability to respond to emergencies

**2. Ultimate goal(s) of this Program**

Ensure an Abundant and Safe Food Supply for All  
 Promote Healthy Eating in Children, Youth, and Adults

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2010	112.0	0.0	17.0	0.0
2011	112.0	0.0	17.0	0.0
2012	112.0	0.0	17.0	0.0
2013	112.0	0.0	17.0	0.0
2014	112.0	0.0	17.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

• Develop new rapid methods for the surveillance, detection, isolation, and quantification of microbes and chemical residues in animals, plants, and food products. • Develop risk monitoring techniques to detect potential hazards in the distribution chain. • Validate the efficacy of techniques in controlling and eliminating microbial and chemical hazards. • Disseminate food safety and bio-security information through extension and research seminars, workshops, and resident and distance education programs, using a variety of media options and communication tools. • Offer safe food production, handling, and sanitation education to groups involved in all levels of food production and service. • Identify best management practices to prevent foodborne illness and to enhance the security of the food supply throughout the food chain. • Develop technology to reduce the hazards and improve the quality of animal food products, which will complement the development of HACCP programs by USDA. • Develop, complement, and maintain an aggressive technology transfer system that effectively communicates work about Safe Food and Human Nutrition to consumers, students, industry, government, and other scientific investigations.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● One-on-One Intervention</li> <li>● Education Class</li> <li>● Demonstrations</li> <li>● Workshop</li> <li>● Group Discussion</li> </ul>	<ul style="list-style-type: none"> <li>● Other 1 (professional &amp; trade journals)</li> <li>● Newsletters</li> <li>● Web sites</li> <li>● Other 2 (white papers; OpEd articles)</li> </ul>

**3. Description of targeted audience**

• Growers and processors of agricultural commodities, commercial and non-commercial food service personnel, market and home gardeners, other food handlers, retail markets, consumers, and educator; • Families and individuals of all ages living in Kansas, including populations with limited resources; low literacy skills; varying ethnicities; disabilities, diseases, or impairments; and documented or identifiable health disparities; • Economic stakeholders, and policy and funding agencies; • Health care, education, and nutrition professionals; • K-State Research & Extension faculty and staff with responsibilities for food and/or nutrition; • Government; and • Consumer groups (i.e., STOP).

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2010	500	0	500	0
2011	500	0	500	0
2012	500	0	500	0
2013	500	0	500	0
2014	0	0	0	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

2010 :0                      2011 :0                      2012 :1                      2013 :1                      2014 :0

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2010	20	2	0
2011	20	2	0
2012	20	2	0
2013	20	2	0
2014	0	0	0

**V(H). State Defined Outputs**

**1. Output Target**

- Number of rapid methods developed for the surveillance, detection, isolation, and quantification of microbes and chemical residues in animals, plants, and food products
 

<b>2010</b> 2	<b>2011</b> 3	<b>2012</b> :3	<b>2013</b> 3	<b>2014</b> 0
---------------	---------------	----------------	---------------	---------------
  
- Number of therapeutic, chemical, and physical treatments developed for animals and plants and their products to eliminate or reduce contamination with potential hazards
 

<b>2010</b> 2	<b>2011</b> 3	<b>2012</b> :3	<b>2013</b> 3	<b>2014</b> 0
---------------	---------------	----------------	---------------	---------------
  
- Number of ServSafe certification workshops
 

<b>2010</b> :30	<b>2011</b> 30	<b>2012</b> :30	<b>2013</b> 30	<b>2014</b> 30
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**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Number of participants demonstrating increase in knowledge level and attitude of clientele in safe food production, handling, and sanitation programs; best management practices to prevent foodborne illness; and social, economic, and communications issues related to food safety and agricultural bio-security
2	Percent of participants in food service manager certification class who successfully complete the exam.
3	Number of food service employees who complete employee level food safety course.
4	Number of foodservice facilities with trained employees

**Outcome #1**

**1. Outcome Target**

Number of participants demonstrating increase in knowledge level and attitude of clientele in safe food production, handling, and sanitation programs; best management practices to prevent foodborne illness; and social, economic, and communications issues related to food safety and agricultural bio-security

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2010** 2000                      **2011** : 2000                      **2012** : 2000                      **2013** 2000                      **2014** :2000

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety

**Outcome #2**

**1. Outcome Target**

Percent of participants in food service manager certification class who successfully complete the exam.

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2010** 300                      **2011** : 400                      **2012** : 400                      **2013** 450                      **2014** :450

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

**Outcome #3**

**1. Outcome Target**

Number of food service employees who complete employee level food safety course.

**2. Outcome Type :** Change in Knowledge Outcome Measure

**2010** 250                      **2011** : 250                      **2012** : 300                      **2013** 300                      **2014** :300

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

**Outcome #4**

**1. Outcome Target**

Number of foodservice facilities with trained employees

**2. Outcome Type :** Change in Action Outcome Measure

**2010** 0                      **2011** : 0                      **2012** : 0                      **2013** 0                      **2014** :0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety

### **V(J). Planned Program (External Factors)**

#### **1. External Factors which may affect Outcomes**

- Appropriations changes
- Competing Programmatic Challenges
- Public Policy changes
- Government Regulations
- Competing Public priorities

##### **Description**

From past experience, any or all of these factors can impact outcomes of this planned program.

### **V(K). Planned Program (Evaluation Studies and Data Collection)**

#### **1. Evaluation Studies Planned**

- During (during program)
- Retrospective (post program)
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Before-After (before and after program)
- Other (see below)

##### **Description**

- Initiatives funded by other sources (i.e., industry)
- Clientele that utilize programs (i.e., number of students taking food science/safety courses)

#### **2. Data Collection Methods**

- Mail
- On-Site
- Structured
- Sampling
- Other (see below)
- Tests
- Unstructured
- Observation

##### **Description**

- Enrollment in programs and student feedback/evaluations

**V(A). Planned Program (Summary)**

**Program #3**

**1. Name of the Planned Program**

Natural Resources and Environmental Management

**2. Brief summary about Planned Program**

Concern about the quality of the environment continues to guide K-State Research and Extension to develop programs that: Improve and protect soil and water quality in agricultural, rural, and urban landscapes and watersheds; conserve and prolong the life of the Ogallala Aquifer and other important surface and groundwater resources while sustaining communities dependent on those water resources; improve understanding of sources, fate, and transport of air emissions from confined animal feeding, agricultural burning and tillage, soil erosion, and other activities; and improve understanding of natural resource, environmental, economic, and social impact of changing climate and energy needs.

**3. Program existence :** Mature (More than five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** No

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	15%		15%	
111	Conservation and Efficient Use of Water	30%		30%	
112	Watershed Protection and Management	30%		20%	
121	Management of Range Resources	15%		20%	
141	Air Resource Protection and Management	10%		15%	
	<b>Total</b>	100%		100%	

**V(C). Planned Program (Situation and Scope)**

**1. Situation and priorities**

• Soil, water, and energy conservation is crucial to sustain the viability of the agricultural economy in Kansas. In western Kansas, the Ogallala Aquifer supports irrigated crop agriculture that provides feed grains for a robust animal feeding industry, as well as providing water for municipal and industrial uses. The aquifer is a finite resource with recharge rates of near zero or so small as to be dwarfed by withdrawal rates. Large areas of Kansas have only a 20-50 years supply at current extraction rates. Water use and availability, the economics of water extraction and crop production, technology development and adoption, and current and new policies will determine the viability of agriculture in Kansas and the useable life of the aquifer. • For areas of rainfed crop production, especially in central and eastern Kansas, strategies for more efficient capture and use of water and for protection of



soil against erosion are critical. There is also an opportunity to better manage soils for carbon sequestration and not only sustain productivity but mitigate increasing ambient concentrations of carbon dioxide. • Agricultural production of biomass is a promising source of renewable energy derived from direct burning for electricity generation and processing into chemical feedstocks and fuels. Use of biofuels will enhance national energy security and promote sustainability of rural economies and social structure. Even though Kansas has a strong production agriculture base that could produce biofuels on a large scale, there will be a need to balance their production with existing agricultural and urban demands on our land and water resources. Developing a conservation approach to agricultural production of biofuels could help meet water quality and conservation goals, protect farmlands, improve biodiversity and wildlife habitat, enhance rural economic opportunities, and simultaneously contribute to national renewable energy goals • Abundant clean water is crucial to the Kansas economy. Much of Kansas depends on surface water in streams or reservoirs that provide drinking water sources, municipal and other domestic and industrial uses, recreation, livestock watering, and other agricultural uses to vast areas of Kansas. The state has several designated high priority Total Maximum Daily Loads (TMDLs) streams and watersheds where water quality restoration actions are needed. Many of the streams are impaired for fecal coliform bacteria and dissolved oxygen (an indicator of sediment, nutrient, and organic matter loading), while many reservoirs are impaired for eutrophication. Common sources of fecal bacteria include livestock in and/or near streams, human contributions from municipal sewage systems or from individual on-site waste systems, and sometimes wildlife. Common sources of nutrient, sediment, and organic loading are from confined livestock, non-confined livestock, and cropland. Watershed remediations with leadership and engagement by local stakeholders are needed to address many of the water quality problems in Kansas. • Almost half (42%) of the nation's fed beef supply is produced and processed on the High Plains of Texas and southwestern Kansas, with projections of continued growth not only in fed beef cattle, but also large scale dairies and swine production, which are relocating to the region. Air quality issues are presenting major challenges for confined animal feeding, as dust and odor-related complaints by the public become more frequent. Animal agriculture is a major source of ammonia, which when combined with other gaseous pollutants, can form respirable particulate matter and contribute to regional haze problems; Kansas is among the seven states that have the highest ammonia emissions in the U.S., according to the United States Environmental Protection Agency. Best Management Practices for minimizing emissions need to be developed, tested, and delivered to producers.

## 2. Scope of the Program

- Multistate Extension
- Multistate Research
- Multistate Integrated Research and Extension
- Integrated Research and Extension

## V(D). Planned Program (Assumptions and Goals)

### 1. Assumptions made for the Program

There is effort underway to re-evaluate water use policy, make adjustments, and provide incentives for water conservation and wise use that will prolong the life of the Ogallala Aquifer. However, these actions need to be coupled with and built upon a sound scientific information base.

### 2. Ultimate goal(s) of this Program

- Water Conservation and Management -- Prolong the life of the Ogallala Aquifer and sustain rural economies by developing and disseminating information about new water conservation and management technologies
- Improved Quality of Land, Air, and Water
- Sustainability of Bioenergy Production and Processing

## V(E). Planned Program (Inputs)

### 1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2010	30.0	0.0	44.0	0.0
2011	30.0	0.0	44.0	0.0
2012	30.0	0.0	44.0	0.0
2013	30.0	0.0	44.0	0.0
2014	30.0	0.0	44.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

• Understand the sources, fate, and transport of important water contaminants (i.e., fecal coliform bacteria, nutrients, sediment, and pesticides [especially atrazine herbicide]), and develop and determine the environmental and economic effectiveness of best management practices for these potential contaminants. • Quantify the environmental and economic effectiveness of best management practices for improving water quality at the watershed level. • Provide technical assistance and support to watershed groups who are developing and implementing Watershed Restoration and Protection Strategies (WRAPS) in Kansas. • Disseminate science-based information through environmental education programs for both youth and adults, and deliver extension programs aimed at stakeholders that focuses on adoption of best management practices in targeted areas for water quality improvement. • Estimate the economic impacts of various water management activities and policy strategies at the farm, water district, and regional scales. • Develop and test strategies for improved management of water, both irrigation and precipitation, within existing cropping systems, and test designs, performance, and management of equipment and systems used for irrigation. • Develop and test new crop, livestock, bioenergy, and riparian forest systems that will reduce water use while optimizing productivity, environmental quality, and profitability, including water saving technologies for concentrated animal feeding operations (CAFOs) and industries that process agricultural commodities. • Develop an information and education program for policy makers, producers, water professionals, and youth audiences with respect to the Ogallala Aquifer, including assessment of the potential impacts of climate change on this important water resource. • Develop science-based emission factors for dust and ammonia at beef cattle feedlots, that include understanding the conditions under which high emissions occur and the animal health effects associated with high emissions. • Develop and test cost-effective abatement technologies for dust and ammonia at beef cattle feedlots. • Develop an understanding of air quality impacts of rangeland burning, including extent and timing of burn events, influence of fuel load on emissions, modeling the downwind transport of particulate matter, and developing a climatology of extreme events. • Develop and test information systems and management practices that will minimize the impact of rangeland burning on air quality in metropolitan areas in the region, and evaluate the benefits of shrubs/trees in ameliorating air contaminants in urban settings. • Disseminate science-based information and transfer technologies to stakeholders, and implement youth education programs focused on air quality. • Determine the community level impacts of biofuel production and processing. • Determine the impacts of cellulosic ethanol production on land use, soil conservation and quality, and water conservation and quality. • Determine the economic impacts and trade-offs associated with biofuel production and processing based on both grain and cellulosic ethanol. • Disseminate science-based information regarding the sustainability of biofuel production and processing.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Other 2 (Fair and conference displays)</li> <li>● Education Class</li> <li>● Workshop</li> <li>● Other 1 (Tours)</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Web sites</li> <li>● Other 2 (Magazine and newspaper articles)</li> <li>● Other 1 (Web-based educational materials)</li> <li>● Newsletters</li> </ul>

**3. Description of targeted audience**

Agricultural producers, youths, policymakers/regulators, crop and livestock consultants

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2010	5000	0	1000	0
2011	5000	0	1000	0
2012	5000	0	1000	0
2013	5000	0	1000	0
2014	5000	0	1000	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

**2010 :0                      2011 :0                      2012 :0                      2013 :0                      2014 :0**

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2010	12	16	0
2011	12	16	0
2012	12	16	0
2013	12	16	0
2014	12	16	0

**V(H). State Defined Outputs**

**1. Output Target**

- Number of educational programs delivered

**2010 25                      2011 30                      2012 :30                      2013 30                      2014 0**

- Number participating in educational programs

**2010 600                      2011 800                      2012 :800                      2013 800                      2014 0**

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Number of producers adopting BMPs that protect environmental quality
2	Number of acres of BMP adoption for atrazine and soil erosion

**Outcome #1**

**1. Outcome Target**

Number of producers adopting BMPs that protect environmental quality

**2. Outcome Type :** Change in Action Outcome Measure

**2010** :90                      **2011** : 90                      **2012** : 95                      **2013** 95                      **2014** :100

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 141 - Air Resource Protection and Management

**Outcome #2**

**1. Outcome Target**

Number of acres of BMP adoption for atrazine and soil erosion

**2. Outcome Type :** Change in Action Outcome Measure

**2010** :10000                      **2011** : 12000                      **2012** : 15000                      **2013** :15000                      **2014** :17000

**3. Associated Institute Type(s)**

- 1862 Extension
- 1862 Research

**4. Associated Knowledge Area(s)**

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 141 - Air Resource Protection and Management

**V(J). Planned Program (External Factors)**

**1. External Factors which may affect Outcomes**

- Economy
- Competing Programmatic Challenges
- Appropriations changes
- Natural Disasters (drought,weather extremes,etc.)
- Competing Public priorities
- Public Policy changes
- Government Regulations

**Description**

From past experience, any or all of these factors can significantly impact outcomes of this planned program.

## **V(K). Planned Program (Evaluation Studies and Data Collection)**

### **1. Evaluation Studies Planned**

- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)

#### **Description**

A combination of the planned studies will provide the most useful and comprehensive results.

### **2. Data Collection Methods**

- Sampling
- Observation

#### **Description**

Selected methods are self-explanatory.

**V(A). Planned Program (Summary)**

**Program #4**

**1. Name of the Planned Program**

Healthy Communities: Youth, Adults and Families

**2. Brief summary about Planned Program**

Through K-State Research and Extension’s multiple approaches – including basic and applied research and research-informed strategies – to promote healthy communities – programs will be developed to: Improve life-long money management skills to create financial security; build harmonious relationships to create resilient families; help children and youth develop competence, confidence, character, compassion, and a sense of belonging (connectedness); engage youth in science to improve life for a sustainable world; assist people to live and thrive in their homes as long as possible; grow communities’ capacity to identify and meet local needs; improve participation of children, youths, and adults in the life of the community; enhance community leadership and entrepreneurship; help residents, organizations, and communities identify opportunities for partnerships; partner with communities to facilitate preparation for, response to, and recovery from emergencies and disasters; build capacity of people to optimize their personal health and well-being and to avoid or manage chronic health conditions; promote healthy eating and physical activity in children, youth, and adults; empower individuals and families to adapt to changes associated with the aging process; and connect individuals and families to mental and emotional support systems and resources.

**3. Program existence :** Mature (More than five years)

**4. Program duration :** Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :** Yes

**6. Expending other than formula funds or state-matching funds :** No

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
724	Healthy Lifestyle	20%		10%	
801	Individual and Family Resource Management	10%		15%	
802	Human Development and Family Well-Being	15%		20%	
803	Sociological and Technological Change Affecting Individuals, Families and Communities	15%		15%	
806	Youth Development	40%		10%	
903	Communication, Education, and Information Delivery	0%		30%	
	<b>Total</b>	100%		100%	

## V(C). Planned Program (Situation and Scope)

### 1. Situation and priorities

Kansans have not been immune to trends that affect children, youths, and families throughout the nation. Adult obesity rates in Kansas have increased almost 70%. Many health problems such as obesity, diabetes, hypertension, stroke, heart disease, certain cancers, respiratory disorders, and osteoporosis are influenced by poor dietary habits and inactivity.

Most Kansas youth are healthy, connected to their families, schools, and communities; and are on the path to becoming contributing and caring adults. However, there are areas of concern in Kansas (e.g., 15% of children between 6th and 12 grades report binge drinking; an increasing number of youth attempt suicide each year; nearly 10,000 military-connected youths experience the transitions associated with multiple deployments; 16% of our children are overweight, 11% do not get enough exercise; and increasing numbers are not completing high school). Most experts agree that the goals of positive youth development are the "5 Cs" (competence, confidence, character, compassion, and connection/sense of belonging).

The United States is falling dangerously behind other nations in developing its future workforce of scientists, engineers, and technology experts. America now faces a future of intense global competition with a startling shortage of scientists. Only 18% of U.S. high school seniors are proficient in science. A mere 5% of current U.S. college graduates earn science, engineering, or technology degrees compared to 66% in Japan and 59% in China. To ensure global competitiveness, we must act now to prepare the next generation of science, engineering, and technology leaders.

Too many individuals and families are experiencing financial crisis because of inadequate savings, too much debt, and poor planning for potential major life events. On average, U.S. households carry about \$8,000 in credit card debt, up two-thirds compared to a decade ago. More than half of Americans report living paycheck to paycheck. During the past decade, the rate of personal bankruptcy in the U.S. rose by 69%. Extension targets programs for youth, financially vulnerable populations, and consumers making financial decisions through their lifetime. The overall goal is for people to acquire the knowledge, skills, behavior changes and motivation to build financial security, which is the cornerstone of prosperous communities, nurturing neighborhoods, and strong families.

The U.S. and Kansas are growing older. Currently 13% of Kansans are age 65+ and that number is expected to increase to 20.2% by 2030. Kansas counties are of particular interest, as 14 reflect an older population that is approximately double that of the nation's average. Changes to meet the demands of this aging demographic are expected in education, health and wellness, health care, family relationships, work and home environments, agriculture, community life, politics, and the economy.

Communities consistently deal with a host of issues that demand leadership in the midst of increasing complexity. They are struggling to maintain competitive advantage in a rapidly changing global economic context. These communities need assistance to identify strategies to address the rapidly changing social, environmental, human, and economic landscape.

### 2. Scope of the Program

- In-State Extension

## V(D). Planned Program (Assumptions and Goals)

### 1. Assumptions made for the Program

- Today's complex issues and problems require new perspectives and skills.
- Community policies and practices that are informed by research can make it easier for people to create healthy social, economic, and physical environments.

### 2. Ultimate goal(s) of this Program

People in Kansas are prepared to thrive in a global society and all aspects of life; communities are sustainable and resilient to the uncertainties of economics, weather, health, and security; and people in Kansas have opportunities and support to improve their physical, mental, and emotional health and well-being.

## V(E). Planned Program (Inputs)

### 1. Estimated Number of professional FTE/SYs to be budgeted for this Program



Year	Extension		Research	
	1862	1890	1862	1890
2010	150.0	0.0	19.0	0.0
2011	150.0	0.0	19.0	0.0
2012	150.0	0.0	19.0	0.0
2013	150.0	0.0	19.0	0.0
2014	150.0	0.0	19.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

• Develop/identify theory- and evidence-based educational programs to promote healthy communities: youth, adults, and families. • Disseminate, implement, and evaluate effectiveness of programs to promote healthy communities: youth, adults, and families. • Strengthen collaborative capacity within K-State Research and Extension and among communities/ organizations to promote healthy communities: youth, adults, and families. • Provide technical assistance and educational programs to citizens seeking to make their communities healthy and sustainable places for meeting human needs. • Establish links between community development researchers and practitioners for cooperative efforts that result in healthy, sustainable communities. • Provide experiential learning opportunities for children and youth to address key and emerging issues that affect their growth and development. • Deliver and evaluate evidence-based community-development strategies for positive youth development in structured out-of-school settings (e.g., after-school programs, youth-serving organizations, clubs). • Strengthen the support for a volunteer development system through training and education on the experiential learning model, 4-H essential elements, ISOTURE model, age appropriate learning experiences and emerging aspects of youth development. • Provide imaginative, motivational, and experiential learning experiences to help youth build competencies and master life skills.

**2. Type(s) of methods to be used to reach direct and indirect contacts**

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> <li>● Workshop</li> <li>● One-on-One Intervention</li> <li>● Group Discussion</li> <li>● Education Class</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Web sites</li> <li>● Public Service Announcement</li> <li>● Newsletters</li> </ul>

**3. Description of targeted audience**

• Families and individuals of all ages living in Kansas, including populations with limited resources; low literacy skills; varying ethnicities; disabilities, diseases, or impairments; and documented or identifiable health disparities • Economic stakeholders, and policy and funding agencies • Health care and education professionals • K-State Research & Extension faculty and staff with responsibilities for healthy communities: youth, adults, and families

**V(G). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2010	20000	0	12500	0
2011	20000	0	12500	0
2012	21000	0	13000	0
2013	21000	0	13000	0
2014	21000	0	14000	0

**2. (Standard Research Target) Number of Patent Applications Submitted**

**Expected Patent Applications**

**2010 :0                      2011 :0                      2012 :0                      2013 :0                      2014 :0**

**3. Expected Peer Review Publications**

Year	Research Target	Extension Target	Total
2010	0	0	0
2011	0	0	0
2012	0	0	0
2013	0	0	0
2014	0	0	0

**V(H). State Defined Outputs**

**1. Output Target**

- Number of educational programs delivered to increase knowledge of healthy communities: youth, adults, and families

**2010 :1000                      2011 :1000                      2012 :1000                      2013 :1000                      2014 :1000**

- Number of program participants

**2010 :30000                      2011 :30000                      2012 :35000                      2013 :35000                      2014 :40000**

- Number of educational programs to increase knowledge of volunteer development, ISOTURE, experiential learning and youth development competencies

**2010 :30                      2011 :30                      2012 :35                      2013 :35                      2014 :35**

- Number of communities that participate in community capacity building trainings and activities led through Extension.

**2010 :40                      2011 :60                      2012 :80                      2013 :100                      2014 :120**

**V(I). State Defined Outcome**

<b>O. No</b>	<b>Outcome Name</b>
1	Percentage of participants who participate in regular physical activity
2	Number of substantial community projects that reflect shared participation in addressing community goals
3	Number of volunteer hours of community members engaged in community improvement programs
4	Number of volunteers, faculty and staff who understand and demonstrate the use of youth development competencies, life skills development, and the essential elements of a positive learning environment.
5	Number of youths who improve connectedness with parents, peers and other adults; improve their sense of social place/integration; improve attachments to prosocial/conventional institutions; express confidence in one's personal efficacy; demonstrate good emotional self regulation, coping, and conflict management skills.
6	Increased number of participants who have established financial goals to guide financial decisions toward financial security

**Outcome #1**

**1. Outcome Target**

Percentage of participants who participate in regular physical activity

**2. Outcome Type :** Change in Action Outcome Measure

**2010** :10                      **2011** : 10                      **2012** : 10                      **2013** :10                      **2014** :0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 724 - Healthy Lifestyle

**Outcome #2**

**1. Outcome Target**

Number of substantial community projects that reflect shared participation in addressing community goals

**2. Outcome Type :** Change in Action Outcome Measure

**2010** :700                      **2011** : 750                      **2012** : 800                      **2013** :800                      **2014** :800

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities

**Outcome #3**

**1. Outcome Target**

Number of volunteer hours of community members engaged in community improvement programs

**2. Outcome Type :** Change in Action Outcome Measure

**2010** :70000                      **2011** : 80000                      **2012** : 80000                      **2013** :90000                      **2014** :100000

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families and Communities
- 806 - Youth Development

**Outcome #4**

**1. Outcome Target**

Number of volunteers, faculty and staff who understand and demonstrate the use of youth development competencies, life skills development, and the essential elements of a positive learning environment.

**2. Outcome Type :** Change in Action Outcome Measure

**2010** :3000                      **2011** : 4000                      **2012** : 4500                      **2013** :4500                      **2014** :0

**3. Associated Institute Type(s)**

•1862 Extension

**4. Associated Knowledge Area(s)**

- 806 - Youth Development

**Outcome #5**

**1. Outcome Target**

Number of youths who improve connectedness with parents, peers and other adults; improve their sense of social place/integration; improve attachments to prosocial/conventional institutions; express confidence in one's personal efficacy; demonstrate good emotional self regulation, coping, and conflict management skills.

**2. Outcome Type :** Change in Action Outcome Measure

**2010** :550                      **2011** : 550                      **2012** : 550                      **2013** :600                      **2014** :600

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 806 - Youth Development

**Outcome #6**

**1. Outcome Target**

Increased number of participants who have established financial goals to guide financial decisions toward financial security

**2. Outcome Type :** Change in Action Outcome Measure

**2010** :100                      **2011** : 100                      **2012** : 125                      **2013** :125                      **2014** :150

**3. Associated Institute Type(s)**

- 1862 Extension

**4. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management

**V(J). Planned Program (External Factors)**

**1. External Factors which may affect Outcomes**

- Public Policy changes
- Appropriations changes
- Competing Programmatic Challenges
- Competing Public priorities

**Description**

{NO DATA ENTERED}

**V(K). Planned Program (Evaluation Studies and Data Collection)**

**1. Evaluation Studies Planned**

- Time series (multiple points before and after program)
- During (during program)
- Before-After (before and after program)

**Description**

{NO DATA ENTERED}

**2. Data Collection Methods**

- Sampling
- Observation

**Description**

{NO DATA ENTERED}