

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

**Program # 8**

**1. Name of the Planned Program**

Youth Development

Reporting on this Program

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

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
806	Youth Development	100%		0%	
	<b>Total</b>	100%		0%	

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

**1. Actual amount of FTE/SYs expended this Program**

Year: 2014	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	14.8	0.0	0.0	0.0
<b>Actual Paid</b>	10.3	0.0	0.0	0.0
<b>Actual Volunteer</b>	352.0	0.0	0.0	0.0

**2. Actual dollars expended in this Program (includes Carryover Funds from previous years)**

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
941429	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
941429	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
2682656	0	0	0

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

**1. Brief description of the Activity**

- Broaden all youths' short-term and long-term learning opportunities in the program priorities of healthy living (including childhood obesity), STEM (including food safety), citizenship and leadership, and communication and the arts.
- Organize 4-H staffing structure based on the four program priorities and outreach to all Iowa children and youth.
- Transition staff time from activity management to program design, delivery, and evaluation; community and volunteer capacity building; and narrowing the achievement gap of Iowa's underserved youth audiences.
- Improve engagement with ISU colleges and faculty to increase youth program offerings, while reaching diverse children and youth using current research and educational design methodologies.
- Strengthen statewide volunteer management infrastructure to reach diverse volunteer pools.
- Enhance welcoming and inclusive communication and partnerships among 4-H staff, partners, families, children, youth, and volunteers.
- Expand ISU and community partnerships to leverage resources for improved access to 4-H educational programs.
- Design learning experiences and conduct training with 4-H staff, county/regional Extension youth staff, volunteers, ISU faculty, and community and state partners that contribute to cultural competency and the life skill outcomes of leadership, citizenship, communication, and learning in environments that meet youths' needs.
- Build state and community level capacity to ensure policies and educational opportunities are based on cultural competency and positive youth development principles and practices.
- Train staff, faculty, and volunteers on how to create positive youth development and culturally competent learning environments in after school programs, camps, clubs, events, school, and other out-of-school time settings.
- Analyze county enrollment trends and identify barriers that limit diverse youth enrollment, retention, and participation in after school, camp, club, special event, and school delivery modes.
- Implement multi-faceted marketing infrastructure to communicate positive youth development principles, practices, and programming successes via news releases, brochures, on-line training, webinars, etc. with 4-H staff, county/regional Extension youth staff, community partners, Iowa State University faculty, families, youth, and volunteers.
- Partner with state and national entities to collect and report youth development and achievement gap impact data.
- Work with other states' 4-H staff to evaluate and/or research positive impact of 4-H participation in the lives of young people and the communities in which youth live and learn.

## **2. Brief description of the target audience**

### **K - 12 Youth**

- 40 high school youth are members of the State 4-H Council; youth participate in leadership and communication training and serve as 4-H ambassadors across the state
- 5,371 youth participated in day and overnight camping experiences
- 27,893 youth in grades 4th - 12th enrolled as 4-H club members
- 16,588 youth participated in special interest/short-term educational experiences
- 25,755 children and youth participated in afterschool programs utilizing 4-H curricula

### **K - 12 Teachers**

- 1,547 K-12 teachers participated in STEM workshops focused on argument-based inquiry and alignment of practices with Next Generation Science Standards
- 42 county Extension youth and 4-H state staff participated in training shifting youth programming to relevant STEM foci

- Extension and Outreach Educators
- 41 county Extension youth and 6 4-H state staff were trained in 4HOnline enrollment data collection and management procedures
- 160 county, regional, and state 4-H staff participated in 3 days of professional development focused on Iowa 4-H's program priorities of healthy living, STEM, citizenship and leadership, and communication and the arts
- 39 regional and state 4-H staff met to collaborate on the implementation of Iowa's 4-H Strategic Plan
- 142 county youth and state 4-H staff participated in educational youth development monthly webinars
- 40 4-H staff representing multiple states enrolled in the on-line course Grow 4-H - Building Partnerships to Benefit Youth

Partnerships to Benefit Youth

4-H Volunteers

- 1,346 volunteers participated in youth development principles and practices training
- 300 volunteers participated in risk management training
- 260 volunteers and 4-H staff participated in New Volunteer Training
- 82 volunteers participated in Safety Education in Shooting Sports training
- 7,049 adult and 3,409 youth volunteers assisted in the implementation of youth development programs

• 70 volunteers and 4-H staff attended state level volunteer training implemented by volunteers Federal, State, and ISU Partners

- 4-H state staff serve on the National 4-H GPS/GIS task force and NAE4-HA task forces for Animal Science, Communication/Arts, and 4-H Hall of Fame
- 4-H staff served on the Iowa Collaboration for Youth Development Council
- 4-H staff served on ISU's university-wide K-12 Working Group
- Iowa 4-H volunteer specialists collaborated with NC Region volunteer specialists to develop the NC Region Volunteer e-Forum training series
- 4-H staff facilitated Youth Activities Program (YAP) policies training with 26 ISU faculty and staff
- 4-H staff initiated collaborative youth programming with ISU Colleges of Agriculture & Life Sciences, Business, Design, Engineering, and Liberal Arts & Sciences for FY15 implementation
- Partnered with National 4-H Council and Chicago Mercantile Exchange to offer Commodity Carnival at 8 county fairs and the Iowa State Fair, reaching 5,725 youth participants
- Iowa 4-H and the Iowa Department of Natural Resources jointly funded a SESS staff position

**3. How was eXtension used?**

eXtension was not used in this program

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

**1. Standard output measures**

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	7049	54593	95225	28852

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

**Patent Applications Submitted**

Year: 2014  
 Actual: 0

**Patents listed**

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2014	Extension	Research	Total
Actual	1	0	0

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

**Output Target**

**Output #1**

**Output Measure**

- Number of volunteers completing one professional development training per year.

Year	Actual
2014	1346

**Output #2**

**Output Measure**

- Number of children and youth who participate in 4-H Afterschool.

Year	Actual
2014	25755

**Output #3**

**Output Measure**

- Number of local 4-H partnerships initiated or strengthened.

Year	Actual
2014	4303

**Output #4**

**Output Measure**

- Number of 4-H livestock exhibitors certified in Food Safety and Quality Assurance (FSQA).

<b>Year</b>	<b>Actual</b>
2014	7735

**Output #5**

**Output Measure**

- Number of unduplicated youth engaged in 4-H learning opportunities.

<b>Year</b>	<b>Actual</b>
2014	95225

**Output #6**

**Output Measure**

- Enrollments in 4-H Foods, Nutrition, Physical Health, and Fitness curricula areas.

<b>Year</b>	<b>Actual</b>
2014	36488

**Output #7**

**Output Measure**

- Enrollments in 4-H Science, Engineering, and Technology (SET) curricula areas.

<b>Year</b>	<b>Actual</b>
2014	42119

**Output #8**

**Output Measure**

- Enrollments in 4-H Citizenship and Leadership curricula areas.

<b>Year</b>	<b>Actual</b>
2014	23236

**Output #9**

**Output Measure**

- Enrollments in 4-H Communications and Arts curricula areas.

<b>Year</b>	<b>Actual</b>
2014	28817

**Output #10**

**Output Measure**

- Percentage of 4-H club members in their senior year of high school who will be attending a college/university/professional school/trade school/institute of higher education within 12 months of their high school graduation.

<b>Year</b>	<b>Actual</b>
2014	90

**Output #11**

**Output Measure**

- Number of children and youth who participate in the camping delivery mode.

<b>Year</b>	<b>Actual</b>
2014	5371

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Percentage of youth who self-report they demonstrate healthy and safe eating, food preparation, and physical activity practices by eating more fruits and vegetables, making healthier food choices, using safe techniques when working in the garden, implementing safe methods when preparing food, becoming more physically active, and helping their family make healthy food choices after engaging in 4-H learning experiences.
2	Percentage of 4-H'ers in grades 4 - 6 taking the FSQA certification test who self-report improved techniques and practices in livestock record keeping, medications, food product safety, and ethics.
3	Percentage of youth who self-report they positively strengthened their attitudes/aspirations/interest toward liking science, feeling they are good at science, hoping to have a job related to STEM, doing STEM activities that are not school assignments, thinking science will be important to their futures, and believing science is useful for solving everyday problems after engaging in 4-H STEM learning experiences.
4	Percentage of youth who self-report they demonstrate effective STEM processing skills by asking questions that can be answered by scientific investigation; designing an investigation to answer a question; explaining to others how to do an investigation; explaining why things happen in an investigation; and creating a graph, table, picture, or display to share information with others after engaging in 4-H STEM learning experiences.
5	Percentage of youth who self-report they demonstrate outstanding communication skills by being confident when speaking in front of others, feeling comfortable asking questions, using good listening skills when others are talking, using technology to express ideas, and creating products to share ideas/information after engaging in 4-H learning experiences.
6	Percentage of youth who self-report they demonstrate productive citizenship skills by making a difference in communities through service learning projects, solving "real-life" community problems through service projects, planning service learning projects that meet a community's needs, and using service learning skills in the future after engaging in 4-H learning experiences.
7	Percentage of youth who self-report they demonstrate effective leadership skills in working with others, listening to others' ideas before making decisions, and handling conflict respectfully after engaging in 4-H learning experiences.
8	Percentage of youth who self-report they demonstrate successful learning skills by creating learning goals, reviewing a variety of resources, analyzing the strengths and weaknesses of different ideas, identifying what needs to change to achieve goals, and applying lessons learned to new experiences after engaging in 4-H educational experiences.
9	Average percentage of youth who self-report improved healthy living practices after engaging in 4-H learning experiences.
10	Average percentage of youth in grades 4-6 who self-report improved food safety and quality assurance practices after engaging in 4-H learning experiences.
11	Average percentage of youth who self-report improved STEM processing practices after engaging in 4-H STEM learning experiences.
12	Average percentage of youth who self-report improved communication practices after engaging in 4-H learning experiences.

13	Average percentage of youth who self-report improved citizenship and leadership practices after engaging in 4-H learning experiences.
14	Average percentage of youth who self-report improved learning practices after engaging in 4-H educational experiences.

**Outcome #1**

**1. Outcome Measures**

Percentage of youth who self-report they demonstrate healthy and safe eating, food preparation, and physical activity practices by eating more fruits and vegetables, making healthier food choices, using safe techniques when working in the garden, implementing safe methods when preparing food, becoming more physically active, and helping their family make healthy food choices after engaging in 4-H learning experiences.

Not Reporting on this Outcome Measure

**Outcome #2**

**1. Outcome Measures**

Percentage of 4-H'ers in grades 4 - 6 taking the FSQA certification test who self-report improved techniques and practices in livestock record keeping, medications, food product safety, and ethics.

Not Reporting on this Outcome Measure

**Outcome #3**

**1. Outcome Measures**

Percentage of youth who self-report they positively strengthened their attitudes/aspirations/interest toward liking science, feeling they are good at science, hoping to have a job related to STEM, doing STEM activities that are not school assignments, thinking science will be important to their futures, and believing science is useful for solving everyday problems after engaging in 4-H STEM learning experiences.

Not Reporting on this Outcome Measure

**Outcome #4**

**1. Outcome Measures**

Percentage of youth who self-report they demonstrate effective STEM processing skills by asking questions that can be answered by scientific investigation; designing an investigation to answer a question; explaining to others how to do an investigation; explaining why things happen in an investigation; and creating a graph, table, picture, or display to share information with others after engaging in 4-H STEM learning experiences.

Not Reporting on this Outcome Measure

#### **Outcome #5**

##### **1. Outcome Measures**

Percentage of youth who self-report they demonstrate outstanding communication skills by being confident when speaking in front of others, feeling comfortable asking questions, using good listening skills when others are talking, using technology to express ideas, and creating products to share ideas/information after engaging in 4-H learning experiences.

Not Reporting on this Outcome Measure

#### **Outcome #6**

##### **1. Outcome Measures**

Percentage of youth who self-report they demonstrate productive citizenship skills by making a difference in communities through service learning projects, solving "real-life" community problems through service projects, planning service learning projects that meet a community's needs, and using service learning skills in the future after engaging in 4-H learning experiences.

Not Reporting on this Outcome Measure

#### **Outcome #7**

##### **1. Outcome Measures**

Percentage of youth who self-report they demonstrate effective leadership skills in working with others, listening to others' ideas before making decisions, and handling conflict respectfully after engaging in 4-H learning experiences.

Not Reporting on this Outcome Measure

#### **Outcome #8**

##### **1. Outcome Measures**

Percentage of youth who self-report they demonstrate successful learning skills by creating learning goals, reviewing a variety of resources, analyzing the strengths and weaknesses of different ideas, identifying what needs to change to achieve goals, and applying lessons learned to new experiences after engaging in 4-H educational experiences.

Not Reporting on this Outcome Measure

## **Outcome #9**

### **1. Outcome Measures**

Average percentage of youth who self-report improved healthy living practices after engaging in 4-H learning experiences.

### **2. Associated Institution Types**

- 1862 Extension

### **3a. Outcome Type:**

Change in Action Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2014	56

### **3c. Qualitative Outcome or Impact Statement**

#### **Issue (Who cares and Why)**

Childhood obesity has more than doubled in children and quadrupled in youth in the past 30 years. The percentage of children aged 6-11 years in the United States who were obese increased from 7% in 1980 to nearly 18% in 2012. Similarly, the percentage of adolescents aged 12-19 years who were obese increased from 5% to nearly 21% over the same period. Iowa has experienced a decline (15.1% to 14.4%) in obesity rates among 2- to 4-year-olds from low-income families between 2008 and 2011. Over that period, Iowa's rate fell from a statistically significant decrease according to the CDC. In addition, Iowa youth (10- to 17-years-old) rank 35th (13.6%) the current U.S. childhood obesity state rankings. Yet, there is still much to be done to combat childhood obesity in Iowa and across the U.S. through youth-based nutritional, environmental, and agricultural education programming.

#### **What has been done**

250 teachers, Extension 4-H staff, volunteers, and community partners attended Connecting Learning and Living curricula trainings throughout Iowa. In addition, 124 Iowa youth participated in food and nutrition special interest 4-H clubs and the 4-H Cook This! culinary challenge, which sought to increase youth participants' consumption of fruits and vegetables, participation in physical activities in addition to enhancing their knowledge of how to safely handle and prepare food, and make healthy food choices for themselves and their families.

#### **Results**

The Iowa 4-H Program uses logic models that act as program development road maps in the areas of planning, implementation, and evaluation. The results indicated in this section are based on healthy living-identified logic model outcomes. A sample of 56 youth enrolled in 4-H healthy living educational programming completed the Iowa 4-H Healthy Living Self-Assessment Tool.

The tool, based on a 5-point Likert scale, examined self-reported changes in youths' healthy living behaviors and practices after participating in 4-H as compared to before participating in 4-H. On average, 48% of youth indicated a 1-point increase and 8.2% indicated a 2-point increase in their healthy living behaviors and practices after participating in 4-H.

Youth indicated being involved in 4-H helped them strengthen their healthy living practices of ... 1) eating a variety of fruits and vegetables, 2) making healthy food/snack choices, 3) working safely in gardens, 4) safely and carefully handling and preparing food to eat, 5) participating in physically active events, and 6) helping their family make healthy food choices and meals.

Reliability analysis of the 4-H Youth Healthy Living Cook This! Self-Assessment Tool indicated that the individual questions within the construct of Healthy Living represented the conceptual meaning of the given construct. "Before" constructs also were significantly different from "After" constructs. Further, statistical comparisons of "After" and "Before" responses (all respondents combined) using paired t-tests were conducted for the construct, as well as for the individual questions within the construct. For the construct and all individual items, the respondents reported statistically higher "After" scores than "Before" scores.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

#### Outcome #10

##### 1. Outcome Measures

Average percentage of youth in grades 4-6 who self-report improved food safety and quality assurance practices after engaging in 4-H learning experiences.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Action Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2014	93

##### 3c. Qualitative Outcome or Impact Statement

###### Issue (Who cares and Why)

Providing a safe and healthy food supply has always been a key issue to the American consumer, but in recent years this issue has become even more important to consumers, wholesale

distributors, restaurant chains, and foreign export markets with the recall of various foods and the outbreak of food borne illnesses. Not only details on treatments and/or medications given to animals, but also how animals have been raised and treated throughout their lives has become front page news. Consequently, livestock producers continually strive to improve management practices to ensure American citizens have the safest food supply in the world.

#### **What has been done**

A comprehensive food safety and quality assurance curriculum program (FSQA) is conducted each year with 4-H'ers. Through the use of a variety of educational materials including video tutorials to hands-on learning, youth learn about animal identification, source verification (when and where the animals are born and raised), biosecurity measures (cleanliness techniques, disease contamination, on-farm disease transmission), drug treatments and injections, quality record keeping, and appropriate animal handling and welfare requirements.

#### **Results**

The Iowa 4-H Program uses logic models that act as program development road maps in the areas of planning, implementation, and evaluation. The results indicated in this section are based on animal science-identified logic model outcomes. In the 2013/2014 program year, youth from 33 randomly selected counties enrolled in the Food Safety and Quality Assurance training were asked to complete a post-learning survey based on a 5-point Likert scale. Youth in grades 4-6 were administered a survey of eight questions regarding how their FSQA techniques and practices were changed in the areas of communication skills, record keeping, and animal drug administration. 508 youth completed the survey. Survey results showed an average of 95.1% of youth indicated a 1- to 4-point increase in their communication techniques. An average of 95% indicated a 1- to 4-point increase in their animal identification and tracking of ill animal practices, and an average of 92.4% youth indicated a 1- to 4-point increase in their medication label usage, appropriate feed additives usage, and drug residue and withdrawal times. Additionally, 73.4% of youth agreed or strongly agreed they want to continue to learn about animal science, 62.8% agreed or strongly agreed they would like to have an animal science job, and 57% agreed or strongly agreed they participate in science activities that are not for school.

Youth indicated being involved in 4-H FSQA training strengthened their techniques and practices in the areas of feeling confident when sharing information with others; effectively identifying and keeping track of treated animals; understanding the importance of treatment withdrawal times; and observing feed labels to administer appropriate feed additives.

#### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
806	Youth Development

#### **Outcome #11**

##### **1. Outcome Measures**

Average percentage of youth who self-report improved STEM processing practices after engaging in 4-H STEM learning experiences.

##### **2. Associated Institution Types**

- 1862 Extension

### 3a. Outcome Type:

Change in Action Outcome Measure

### 3b. Quantitative Outcome

Year	Actual
2014	37

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

The Business-Higher Education Forum's (BHEF) "Increasing the Number of STEM Graduates: Insights from the U.S. STEM Education & Modeling Project" (BHEF.com, 2010) offers insights to increase the number of students who pursue majors and careers in the fields of science, technology, engineering, and mathematics (STEM) at the impetus of the organization's Securing America's Leadership in STEM Initiative. The insights from the project include a role for the 4-H program for increasing the number of STEM college graduates. Increasing that number will require a carefully integrated (in fact, mutually reinforcing) P-12 and higher education strategy. Focusing on improvements to preschool through high school or to higher education alone will not result in sufficiently large increases to achieve the goal of doubling the number of STEM graduates in the next decade. In 2008 a Congressional Research Service (CRS) report (Kuenzi, 2008) urged the immediate need for STEM-related workforce development. The Iowa Department of Economic Development reports: The state's manufacturing sector contributes the largest share of state gross domestic product (GDP) of any major sector with \$23 billion contributed in 2009. In order for Iowa youth to be successful in the 21st century they must be prepared with the skills and meet workforce needs.

#### What has been done

Throughout the state of Iowa, Extension 4-H programs offer STEM learning opportunities for Iowa youth and their adult mentors to increase their STEM process skills and improve their positive attitudes toward STEM education and careers through workshops (on and off ISU campus), school enrichment activities, STEM themed camps, after school programs, and clubs as well as individual project work on STEM related topics. Programming provided during these in- and out-of-school opportunities utilized national 4-H curriculum such as The Power of Wind, Iowa State University and other Land Grant University resources such as GEAR Tech 21, and other available science education resources such as those available through The Iowa Governor's STEM Advisory Council's Initiative, NASA and NOAA. The Iowa 4-H program also provides the State Science and Technology Fair of Iowa, a research conference for youth to showcase and present their work and the necessary support needed to for participating youth to conduct research as an opportunity for these youth to experience STEM in an authentic manner supported by an adult mentor.

#### Results

The Iowa 4-H Program uses logic models that act as program development road maps in the areas of planning, implementation, and evaluation. The results indicated in this section are based on STEM-identified logic model outcomes. 111 youth enrolled in 4-H STEM programming, including a state science fair and summer camps, completed the Iowa 4-H STEM Self-Assessment Tool. The tool, based on a 5-point Likert scale, examined self-reported changes in youths' STEM processing practices after participation in 4-H as compared to before participating in 4-H. On average, 20.4% of youth indicated a 1-point increase, 15.2% indicated a 2-point increase, and 1.8% indicated a 3-point increase in their science processing practices after participating in 4-H.

Youth indicated being involved in 4-H helped them strengthen their STEM processing skills in the areas of ... 1) asking questions that can be answered by scientific investigation; 2) designing an investigation to answer a question; 3) explaining to others how to do an investigation; 4) creating a graph, table, picture, or display to share information with others; 5) explaining why things happen in an investigation; 6) using evidence to defend their ideas; 7) using evidence to evaluate other people's ideas; 8) developing a design or model for solving a problem; 9) developing a way to test a design and use the results to improve the design; 10) sharing responsibilities with team members and letting others do some of the work; 11) using technology in a safe and appropriate manner; and 12) considering ethical implications of technology after engaging in 4-H STEM learning experiences.

Reliability analysis of the 4-H STEM Self-Assessment Tool indicated that the individual questions within each of the six constructs of citizenship, leadership, communication, learning, career, and science processing practices, represented the conceptual meaning of the given construct. Further, statistical comparisons of "After" and "Before" responses (all respondents combined) using paired t-tests were conducted for each of the constructs, as well as for the individual questions within the constructs. For each construct, and 33 of 39 STEM processing practices individual indicators, the respondents reported statistically higher "After" scores than "Before" scores.

#### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
806	Youth Development

#### **Outcome #12**

##### **1. Outcome Measures**

Average percentage of youth who self-report improved communication practices after engaging in 4-H learning experiences.

##### **2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2014	53

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

According to the study, Are They Really Ready to Work? Employer's Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century Workforce (2006), "the future workforce is here, and it is ill-prepared." Business leaders reported that "while the three 'R's" are still fundamental to every employee's ability to do the job, applied skills such as team work, critical thinking, and communication are essential for success at work. In fact, at all education levels, these applied skills trump back knowledge skills such as reading and mathematics in importance in the view of employers." High percentages of surveyed employers indicated that high school graduates entering the workforce are deficiently prepared in the most important skills - written/oral communications (written = 81% and oral = 53%), professionalism/work ethic (70%), critical thinking/problem solving (70%), ethics/social responsibility (44%), and teamwork/collaboration (35%).

**What has been done**

All 100 counties offered a county communication event program. 2,643 4-H members participated in public speaking and performance events at the 2014 Iowa State Fair. Competitive events comprised of Robotics Challenge, Cook This! and Livestock Judging contests, which included oral communication opportunities as part of the event. Increasing communication skills and communication opportunities in the local 4-H club continue to be emphasized at 4-H leader trainings. All Iowa 4-H'ers are expected to demonstrate learning by giving a presentation or demonstration before a group, typically at a club or group meeting. More than 20,000 4-H members demonstrated written, oral and visual communication skills as they prepared and presented fair exhibits for evaluation.

**Results**

The Iowa 4-H Program uses logic models that act as program development road maps in the areas of planning, implementation, and evaluation. The results indicated in this section are based on communication-identified logic model outcomes. 551 youth who participated in various 4-H camps and 4-H special events completed the Iowa 4-H Citizenship, Leadership, Communication, and Learning Self-Assessment Tool. The tool, based on a 5-point Likert scale, examined self-reported changes in youths' communication practices after participating in 4-H compared to before participating in 4-H. On average, 38.6% of youth indicated a 1-point increase, 13.4% indicated a 2-point increase, .87% indicated a 3-point increase, and .08% indicated a 4-point increase in their communication practices after participating in 4-H.

Youth commonly indicated being involved in 4-H helped a young person strengthen communication practices such as ... 1) feeling confident when speaking in front of others, 2)

feeling comfortable asking questions, 3) using good listening skills when others are talking, 4) using technology to express interests, and 5) creating products to share ideas/information.

Reliability analysis of the Iowa 4-H Citizenship, Leadership, Communication, and Learning Self-Assessment tool indicated that the individual questions within each of the four respective constructs of citizenship, leadership, communication, and learning represented the conceptual meaning of the given construct. "Before" constructs were also significantly correlated with "After" constructs. Further, statistical comparisons of "After" and "Before" responses (all respondents combined) using paired t-tests were conducted for each of the constructs, as well as for the individual questions within the constructs. The respondents reported statistically higher "After" scores than "Before" scores for each construct and all individual questions.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

#### Outcome #13

##### 1. Outcome Measures

Average percentage of youth who self-report improved citizenship and leadership practices after engaging in 4-H learning experiences.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Action Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2014	51

##### 3c. Qualitative Outcome or Impact Statement

###### Issue (Who cares and Why)

###### A. Citizenship

Campbell and Erbstein (2012) found through their research for the Journal of Community Youth Development that youth's civic engagement can deepen their civic commitment, extend social capital, create meaningful relationships with adults, foster self-esteem and identity development and build a sense of self and collective efficacy. In addition, individuals' involvement in the community positively impacts not just the participants, but also the larger community.

###### B. Leadership

According to Wehmeyer, Agran, & Hughes (1998), youth leadership is part of the youth development process and supports youth in developing: (a) the ability to reflect upon his or her strengths and weaknesses; establish personal and occupational goals; and have the self-esteem, confidence, motivation, and ability to carry them out (including the capacity to develop support networks in order to fully participate in community life and effect positive social change); and (b) the competence to point or direct others on a course of action, influence individuals' opinions and behaviors, and serve as a role model. Evaluations of youth development programs have demonstrated that young people who participate in youth leadership and civic engagement activities consistently get the supports and opportunities needed for healthy youth development (Innovation Center for Community and Youth Development, 2003). Additionally, research shows that youth who participate in developmentally appropriate decision making activities and those who have access to meaningful youth development supports and opportunities are better prepared to make a successful transition to adulthood (Gambone, Klem, and Connell 2002).

### **What has been done**

#### **A. Citizenship**

4,038 Iowa youth are enrolled in the 4-H Citizenship project. 862 youth and adults contributed 3,057 volunteer hours to improve their communities through the State 4-H Youth Conference and DuPont Pioneer Community Improvement grants. Fourteen Iowa 4-H clubs leveraged \$2,725 in DuPont Pioneer Community Improvement grants into nearly \$8,431 in community improvement projects. Four 4-H members served as delegates to National 4-H Conference; 84 Iowa 4-H'ers participated in the national Citizenship Washington Focus program. Twenty-two members interviewed for state level Citizenship project awards. Participation in a service activity is an expectation of all Iowa 4-H members and Iowa 4-H clubs.

#### **B. Leadership**

2,487 Iowa youth are enrolled in the 4-H Leadership project. More than 1,612 community and project clubs provide leadership experiences for members. 529 youth and 34 adults received leadership training during the Iowa 4-H Youth Conference; 65 youth and adults completed Youth-Adult Partnerships training; 19 4-H members represented Iowa at the National 4-H Congress. Forty high school youth provide leadership as members of the State 4-H Council, planning the 4-H Youth Conference and serving as ambassadors for the 4-H program. 115 youth had volunteer leadership positions with 4-H events during the 2014 Iowa State Fair.

### **Results**

#### **A. Citizenship**

The Iowa 4-H Program uses logic models that act as program development road maps in the areas of planning, implementation, and evaluation. The results indicated in this section are based on citizenship-identified logic model outcomes. 530 youth enrolled in various 4-H camps and 4-H special events completed the Iowa 4-H Citizenship, Leadership, Communication, and Learning Self-Assessment Tool. The tool, based on a 5-point Likert scale, examined self-reported changes in youths' citizenship practices after participating in 4-H as compared to before participating in 4-H. On average, 41.7% of youth indicated a 1-point increase, 10.5% indicated a 2-point increase, and 1.4% indicated a 3-point increase in their citizenship practices after participating in 4-H.

Youth commonly indicated being involved in 4-H helped a young person strengthen citizenship practices such as ... 1) making a difference in communities through service learning projects, 2) applying knowledge in ways that solve real-life problems through service learning projects, 3) working on service projects to meet needs in their communities, and 4) gaining skills that will help

them in the future through service their communities.

**B. Leadership**

The Iowa 4-H Program uses logic models that act as program development road maps in the areas of planning, implementation, and evaluation. The results indicated in this section are based on leadership-identified logic model outcomes. 570 youth enrolled in 4-H camps and 4-H special events completed the Iowa 4-H Citizenship, Leadership, Communication, and Learning Self-Assessment Tool. The tool, based on a 5-point Likert scale, examined self-reported changes in youths' leadership practices after participating in 4-H as compared to before participating in 4-H. On average, 38.1% of youth indicated a 1-point increase, 9.6% indicated a 2-point increase, and 1.5% indicated a 3-point increase in their leadership practices after participating in 4-H.

Youth commonly indicated being involved in 4-H helped a young person strengthen leadership practices such as ... 1) working together in a team, 2) listening and talking to others before making decisions, and 3) handling conflict respectfully.

**Overarching Citizenship and Leadership Results**

Reliability analysis of the Iowa 4-H Citizenship, Leadership, Communication, and Learning Self-Assessment tool indicated that the individual questions within each of the four respective constructs of citizenship, leadership, communication, and learning represented the conceptual meaning of the given construct. "Before" constructs were also significantly correlated with "After" constructs. Further, statistical comparisons of "After" and "Before" responses (all respondents combined) using paired t-tests were conducted for each of the constructs, as well as for the individual questions within the constructs. The respondents reported statistically higher "After" scores than "Before" scores for each construct and all individual questions.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
806	Youth Development

**Outcome #14**

**1. Outcome Measures**

Average percentage of youth who self-report improved learning practices after engaging in 4-H educational experiences.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
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2014

53

### 3c. Qualitative Outcome or Impact Statement

#### Issue (Who cares and Why)

According to the study, *Are They Really Ready to Work? Employer's Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century Workforce* (2006), "the future workforce is here, and it is ill-prepared." Business leaders reported that "while the three 'R's" are still fundamental to every employee's ability to do the job, applied skills such as team work, critical thinking, and communication are essential for success at work. In fact, at all education levels, these applied skills trump back knowledge skills such as reading and mathematics in importance in the view of employers." High percentages of surveyed employers indicated that high school graduates entering the workforce are deficiently prepared in the most important skills -- written/oral communications (written = 81% and oral = 53%), professionalism/work ethic (70%), critical thinking/problem solving (70%), ethics/social responsibility (44%), and teamwork/collaboration (35%). Additionally, nearly 75% of surveyed business leaders identified creativity/innovation as a top applied skill rising in importance for new entrants in the workforce.

#### What has been done

23,456 4-H'ers enrolled in one or more of the 38 project areas offered; 71,769 other youth participated in other 4-H educational programs. All curriculum materials available to Iowa 4-H members is selected from the National 4-H Curriculum Directory and/or other peer reviewed resources. The experiential learning and inquiry based learning models are used as the primary instructional methods. All 4-H clubs and members are expected to set goals, evaluate progress towards goals, and keep records of activities and evaluate experiences. 100 counties provide a county fair exhibit opportunity for members to share what they have learned. Participating members share their exhibit goals, what was done, and what was learned as part of exhibit conference judging. Camps, conferences and contests provided additional learning opportunities for selected members to enhance and demonstrate skills learned.

#### Results

The Iowa 4-H Program uses logic models that act as program development road maps in the areas of planning, implementation, and evaluation. The results indicated in this section are based on learning-identified logic model outcomes. 530 youth enrolled in 4-H camps and 4-H special events completed the Iowa 4-H Citizenship, Leadership, Communication, and Learning Self-Assessment Tool. The tool, based on a 5-point Likert scale, examined self-reported changes in youths' learning practices after participating in 4-H as compared to before participating in 4-H. On average, 40.9% of youth indicated a 1-point increase, 10% indicated a 2-point increase, 1.8% indicated a 3-point increase, and .1% indicated a 4-point increase in their learning practices after participating in 4-H.

Youth commonly indicated being involved in 4-H helped a young person strengthen learning practices such as ... 1) creating learning goals; 2) reviewing a variety of resources related to a topic; 3) identifying the strengths and weaknesses of different ideas, solutions, or approaches; 4) thinking about what is going well and what needs to change to achieve goals; and 5) applying what was learned to new experiences.

Reliability analysis of the Iowa 4-H Citizenship, Leadership, Communication, and Learning Self-Assessment tool indicated that the individual questions within each of the four respective

constructs of citizenship, leadership, communication, and learning represented the conceptual meaning of the given construct. "Before" constructs were also significantly correlated with "After" constructs. Further, statistical comparisons of "After" and "Before" responses (all respondents combined) using paired t-tests were conducted for each of the constructs, as well as for the individual questions within the constructs. The respondents reported statistically higher "After" scores than "Before" scores for each construct and all individual questions.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

#### V(H). Planned Program (External Factors)

##### External factors which affected outcomes

- Economy
- Public Policy changes
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (high rates of staff turnover)

##### Brief Explanation

52% of Iowa's school-aged youth reside in Iowa's 11 most populous counties compared to 49.5% in 2007. High rates of staff turnover, both at the state and county Extension district levels, have reduced consistent outreach capacity targeted toward these counties. As a result, the number of youth reached (all delivery modes) in urban/heavily populated counties has dropped by 1/3 since 2007 while the number of youth reached in non-urban counties has remained relatively static, but is also experiencing a decline in numbers. Persistent staffing fluctuations have also presented barriers in initiating and sustaining educational programs to address youth diversity outreach goals that more effectively serve Iowa's growing ethnic and racial minority audiences.

Aligning program outcomes with NIFA priorities while maintaining and improving a comprehensive 4-H Youth Development Program remains a challenge. The Iowa 4-H Youth Program emphasizes broader youth development and life skills outcomes, while NIFA priorities are typically more narrowly focused. The Iowa 4-H Youth Program has increased efforts to measure program participants' knowledge and behavior changes in selected educational programs that match NIFA priority areas (ex: food safety and childhood obesity). Efforts were broadened to identify STEM opportunities within current educational programs and strong partnerships were built with Iowa STEM Hubs and Iowa State University faculty.

Adoption of the Iowa Core by the Iowa Department of Education and local school districts presents challenges in the ability of the Iowa 4-H Program to partner with schools. Because local school districts emphasize formal education models, they are often hesitant to engage in non-formal youth development educational offerings. ISU Extension and Outreach 4-H staff continue to evaluate 4-H curricula to identify Iowa Core standards being addressed by

4-H curricula, and revise curricula, when necessary, to meet Iowa Core standards required by local school districts.

Implementation of innovative programs to reach all Iowa children and youth depends heavily on the ability of 4-H staff and volunteers to develop welcoming and inclusive relationships with diverse children, youth, families, community partners, and volunteers. In order for the statewide Iowa 4-H Program and individual county 4-H programs to be relevant and sustainable, support is paramount from 4-H county Extension youth staff, 4-H partners, and 4-H volunteers for emerging 4-H delivery models, varied program content, unique partnerships, and diverse program audience outreach.

In the past year, significant time and attention was required to improve internal operational and staffing efficiencies. In FY15, a primary priority for ISU Extension and Outreach 4-H is to further develop welcoming and inclusive partnerships and educational experiences with all Iowa children and youth. Iowa 4-H is striving to be the K - 12 leader at Iowa State University, and across the state, by strategically focusing on diverse internal and external partnerships with the intent to narrow the achievement gap of Iowa's underserved youth audiences.

## **V(I). Planned Program (Evaluation Studies)**

### **Evaluation Results**

The Iowa 4-H Program uses logic models as program development road maps in the areas of planning, implementation, and evaluation. Logic models have been created for STEM, healthy living, citizenship and leadership, and communication and the arts constructs. Self-assessment tools with indicators corresponding to each construct were completed by 4-H youth participants. The self-assessment tools examined self-reported changes in youths' knowledge and/or practices after participating in 4-H as compared to before participating in 4-H.

- Self-assessment tools were based on a 5-point Likert scale (where 1 = "not at all" and 5 = "great deal").
- For the healthy living, citizenship, leadership, communication, and learning constructs, and all corresponding individual indicators, youth reported statistically higher "After" scores than "Before" scores.
- For the STEM processing practices construct, and 33 of the 39 corresponding individual indicators, youth reported statistically higher "After" scores than "Before" scores.
- On average, 48% of youth indicated a 1-point increase and 8.2% indicated a 2-point increase in their healthy living behaviors and practices after participating in 4-H.
- An average of 95% of youth indicated a 1- to 4-point increase in their animal identification and tracking of ill animal practices, and an average of 92.4% youth indicated a 1- to 4-point increase in their medication label usage, appropriate feed additives usage, and drug residue and withdrawal times.
- On average, 20.4% of youth indicated a 1-point increase, 15.2% indicated a 2-point increase, and 1.8% indicated a 3-point increase in their science processing practices after participating in 4-H.
- On average, 38.6% of youth indicated a 1-point increase, 13.4% indicated a 2-point increase, .87% indicated a 3-point increase, and .08% indicated a 4-point increase in their communication practices after participating in 4-H.

- On average, 41.7% of youth indicated a 1-point increase, 10.5% indicated a 2-point increase, and 1.4% indicated a 3-point increase in their citizenship practices after participating in 4-H.
- On average, 38.1% of youth indicated a 1-point increase, 9.6% indicated a 2-point increase, and 1.5% indicated a 3-point increase in their leadership practices after participating in 4-H.
- On average, 40.9% of youth indicated a 1-point increase, 10% indicated a 2-point increase, 1.8% indicated a 3-point increase, and .1% indicated a 4-point increase in their learning practices after participating in 4-H.

## Key Items of Evaluation

### CHILDHOOD OBESITY

The Iowa 4-H Program uses logic models that act as program development road maps in the areas of planning, implementation, and evaluation. The results indicated in this section are based on healthy living-identified logic model outcomes. A sample of 56 youth enrolled in 4-H healthy living educational programming completed the Iowa 4-H Healthy Living Self-Assessment Tool. The tool, based on a 5-point Likert scale, examined self-reported changes in youths' healthy living behaviors and practices after participating in 4-H as compared to before participating in 4-H. On average, 48% of youth indicated a 1-point increase and 8.2% indicated a 2-point increase in their healthy living behaviors and practices after participating in 4-H. For the healthy living construct and all individual healthy living indicators/items, the respondents reported statistically higher "After" scores than "Before" scores.

Youth indicated being involved in 4-H helped them strengthen their healthy living practices of...1) eating a variety of fruits and vegetables, 2) making healthy food/snack choices, 3) working safely in gardens, 4) safely and carefully handling and preparing food to eat, 5) participating in physically active events, and 6) helping their family make healthy food choices and meals.

### FOOD SAFETY

The Iowa 4-H Program uses logic models that act as program development road maps in the areas of planning, implementation, and evaluation. The results indicated in this section are based on animal science-identified logic model outcomes. In the 2013/2014 program year, youth from 33 randomly selected counties who were enrolled in the Food Safety and Quality Assurance training were asked to complete a post-learning survey based on a 5-point Likert scale. Youth in grades 4 - 6 were administered a survey of eight questions regarding how their FSQA techniques and practices were changed in the areas of communication skills, record keeping, and animal drug administration. 508 youth completed the survey. Survey results showed an average of 95.1% of youth indicated a 1- to 4-point increase in their communication techniques. An average of 95% indicated a 1- to 4-point increase in their animal identification and tracking of ill animal practices, and an average of 92.4% youth indicated a 1- to 4-point increase in their medication label usage, appropriate feed additives usage, and drug residue and withdrawal times. Additionally, 73.4% of youth respondents agreed or strongly agreed they want to continue to learn about animal science, 62.8% agreed or strongly agreed they would like to have an animal science job, and 57% agreed or strongly agreed they participate in science activities that are not for school.

Youth indicated being involved in 4-H FSQA training strengthened their techniques and practices in the areas of feeling confident when sharing information with others; effectively identifying and keeping track of treated animals; understanding the importance of treatment withdrawal times; observing feed labels to administer appropriate feed additives.