V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

4-H Youth Development

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	10%		0%	
806	Youth Development	90%		0%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	50.0	0.0	0.0	0.0
Actual	54.4	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**
1787677	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
1787677	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
16600783	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

4-H Youth Development draws on research generated by non-Extension faculty on campus as well as Extension and non-Extension research throughout the country. A variety of educational delivery systems are built on this research base to help youth develop into adults who contribute in positive ways to

their families and communities. Delivery included community clubs, after-school programs, conferences, and camps. The priorities focused on [1] learning employment skills; [2] experiencing healthy relationships; [3] becoming physically fit; [4] thinking green; and [5] engaging in science. The current curriculum also addresses the three national areas of focus--science, engineering, and technology [SET], healthy lifestyles, and youth leadership. Examples follow. A total of 265,596 youth were enrolled in 4-H this past year.

A variety of activities occurred this year related to club participation in national and quarterly state science experiments and SET robotics projects [2,273 enrolled youth] and robotics team competitions. Cook County continued to offer youth science classes through its Mobile Science Laboratory. **Science Siesta** and **Advanced Science Siesta** programs designed for girls in grades 4-6 and 7-8 introduced them to fun hands-on science activities and career opportunities. The program aims to dispel myths that science is too difficult, not fun, and more suited to males. Twelve new groups were formed to master video production, a new 4-H project introduced this past year. Statewide enrollment in the project totaled 483 youth. **Illinois Summer Academies** are three-day conferences on the University of Illinois campus that provided high school teens with opportunities to explore a college campus as well as hands-on workshops on potential careers in SET or leadership development training. A grant-funded national applied research project, **4-H Tech Wizards**, designed to establish mentoring programs for at-risk, underserved youth in an after-school setting, was also initiated.

Health Jam involved over 250 youth from eight counties in two-day camps that allowed them to explore health careers and to learn about pursuing a healthy lifestyle and keeping their bodies fit [also see Childhood Obesity planned program]. **Welcome to the Real World,** a multi-disciplinary curriculum and simulation that allows youth from 12-18 to explore careers and money management [balancing income and expenses] in adult life, was revised by Youth Development and Family and Consumer Economics Extension Educators this past year [also see Agricultural and Consumer Economics planned program].

Volunteer Training. Volunteers are key in delivering 4-H Youth Development programs and are instrumental as caring adults who create an environment that is critical to positive youth development. This past year 29,131 volunteers gave time and talents to the 4-H Youth Development program in Illinois. Volunteer training included 19 workshops across Illinois to help volunteers address the key elements needed to ensure positive youth development--belonging, independence, generosity, and mastery [BIG-M] and an orientation series of six one-hour modules for new volunteers that addressed the role of the 4-H volunteer club organization, program planning, positive youth development, communications with a 4-H club, and parental involvement, experiential learning, and public presentations. Leaders also had instant access to a new series of online tips **Leaders on the Go** written in a question and answer format. In addition, the State 4-H Office promoted the national **Everyone Ready** online professional development modules focused on working with volunteers; 205 Illinois Extension staff participated.

2. Brief description of the target audience

Youth between the ages of 8 and 19 including children of military families, as well as volunteers who work with youth, teachers, parents, and community members.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	10000	0	300000	100000
Actual	396937	0	266972	190116

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

Patent Applications Submitted

Year: 2010
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Plan	1	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- New Extension Program Curricula Developed

Year	Target	Actual
2010	1	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increased Knowledge About Science And Health Careers
2	Increased Knowledge Of Strategies To Manage Risk In Planning Events For Youth
3	Increased Knowledge Of Science, Engineering, And Technology
4	Increased Knowledge Of Social And Physical Skills

Outcome #1

1. Outcome Measures

Increased Knowledge About Science And Health Careers

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	200	364

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Reports of college degrees awarded, media reports, and business and industry leaders' expressed concerns about the declining interest of youth in science, engineering, and technology have identified this decline as a situation that may undermine the country's standard of living and global position of leadership. Extension's most recent statewide survey of the public related to educational needs revealed that 2,273 respondents expressed interest in expanding youth interest in science, math, and technology. Research findings suggest that girls generally do not pursue science careers because they believe them to be too difficult and not fun. Further, they have rare opportunities to see women in the workforce performing in these jobs.

What has been done
University of Illinois Extension initiated the Science Siesta program in 2002. Now in its ninth year, Science Siesta provides girls in grades 4-6 with the opportunity to meet and interact with female scientists, conduct fun hands-on science activities in a lab setting, and participate in activities in stimulating science-centered environments. It is conducted annually at the Discovery Center Children's Museum and Burpee Museum of Natural History. This past year 203 girls participated in the event. University of Illinois Extension 4-H also received a $50,000 Healthy Living grant from a private foundation to support the Health Jam program. Over 250 fifth-grade students from eight counties participated in two-day camps and an eight-week Walk Across Illinois. During the camps, the youth learned how to keep their bodies healthy and fit and explored health professions.

Results
Of the 195 participants who completed the evaluation at the end of Science Siesta, 190 [98%] indicated that they 'agree' or 'strongly agree' that they are more aware of the variety of science-

related careers, and 178 [92%] increased their interest in science-related careers. In addition, 180 [93%] learned science techniques they didn't know before attending Science Siesta, and 171 [88%] increased their confidence in their ability to study science. Using a pre- and post-test evaluation format, 169 Health Jam participants [66% of the 250 youth] were able to list at least one additional health profession on the post-test after participating in the day-camp experience.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
806	Youth Development

Outcome #2

1. Outcome Measures

Increased Knowledge Of Strategies To Manage Risk In Planning Events For Youth

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Increased Knowledge Of Science, Engineering, And Technology

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	3117

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Reports of college degrees awarded, media reports, and business and industry leaders' expressed concerns about the declining interest of youth in science, engineering, and technology have identified this decline as a situation that may undermine the country's standard of living and global position of leadership. In addition, Extension's most recent statewide survey of the public related to educational needs revealed that 2,273 respondents expressed interest in expanding youth interest in science, math, and technology.

What has been done

Illinois recently launched a robotics 4-H project and purchased robotics kits to loan to counties for use in training volunteers and youth. A state 4-H Robotics Challenge was held on campus for a second year with 17 teams participating. In 2009-10, 841 Illinois youth were enrolled in the 4-H Robotics project. The goal of this educational program was to develop skills in robotics and team work, which would then influence confidence in the use of technology and interest in science and technology related science careers. An in-depth evaluation was developed this past year to: [1] assess indicators of quality; [2] program components deemed critical to the program goals; and [3] program outcomes associated with robotic teams. The evaluation was then conducted in one county that had received a three-year grant to support eight robotics teams that met weekly or twice a week in the fall to prepare with their adult coach and technical advisors for a regional LEGO League competition in mid-December.

Science experiments were designed and supporting materials were developed for 4-H clubs and groups at the national and state level. Participation was promoted at the county level for the national water quality-related experiment and two Illinois experiments: Wind Your Way Around Your Own DNA and Shake Rattle and Roll: Soil - Its' Composition and Structure. In October, youth throughout Illinois were involved in completing a three-tiered science experiment to learn how heightened levels of carbon dioxide can impact water quality and climate change. This experiment taught young people how increased amounts of carbon dioxide can affect aquatic animals, plants and other living organisms in lakes, streams, rivers and oceans. Using workbooks and online guides, the nationwide experiment was designed to help youth relate their 4-H National Youth Science Day experiences back to their own lives by teaching them how to measure a carbon footprint and how to estimate energy savings by looking at gas and electric bills. The Illinois science experiment 'Shake, Rattle, and Roll: Soil - Its' Composition and Structure' gave middle school youth an opportunity to 'shake things up' in order to learn what makes up soil, how soil keeps them alive, and how they can keep from losing this resource. The 'Wind Your Way Around Your Own DNA' science experiment is part of Illinois' Science Excited series and gave 4-H youth throughout the state of Illinois the opportunity to explore their own DNA. Engineering and technology abilities, including observation and comparing/contrasting, were used by the youth involved in this experiment.

Results

Robotics Teams: The evaluation program quality items related to the dimensions of learning engagement, supportive adults, and belonging. Another set of items was designed to assess program components of practice and peer interaction. Both sets of items incorporated the same 4-point strongly disagree-to-strongly agree Likert scale. The third section of the evaluation included items related to robotics interest and skill development outcomes using a retrospective pre- and post-test format with a 10-point scale [1=low and 10=high]. Questionnaires were mailed to each program participant about four to six weeks after the end of the program. Twenty-six youth completed the questionnaire. Youth reported that as a result of the program they built their confidence in technology and learned to value helping other teams succeed. On average, the 26 respondents also reported a 2-3 point average increase [on a 10 point scale] in their interest in robots and robot competitions. There were also positive changes in interest in alternative energies, engineering, computers, and science but to a lesser degree, since interest in computers and science was already at a high level before participating in the robotic team experience. The program also had a very positive effect on the development of six specific robotic skills with youth reporting a change of 3-5 points on the 10-point scale. Using an average team size of seven youth, the results of this evaluation suggest that an estimated 119 youth [17 teams in the state competition x 7 members] increased their confidence in using technology and interest in science and technology.

Science Experiments: Sixty-one clubs/groups with over 3,000 members participated in completing the national water quality experiment. In response to questions asked of the youth participants at the end of the experiment, 79% of the groups indicated they would like to learn more about water quality, 100% would like to learn more about other science topics, and 95% would like to learn more about technology in science. Twelve groups that included over 900 youth conducted the soil experiment. In response to questions asked of the youth participants at the end of this experiment, 92% of the groups could identify different particle layers in their bottle demonstrating science skills in observation, comparing, and contrasting, and 67% could: [1] explain what the three primary mineral components of soil are; [2] explain how soil is formed [the process of weatherization]; and [3] felt more confident when comparing and contrasting different soil particles and layers. In addition, 83% of the groups would like to do more activities like this in the future. Ten clubs/groups that included over 300 youth conducted the DNA experiment. In response to questions asked of the youth participants at the end of this experiment, 90% of the groups: [1] stated that they could explain where DNA is found; [2] could name one way biotechnology is used to help humans; [3] could name one way biotechnology is used in agriculture; and [4] would like to do more activities like this in the future.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #4

1. Outcome Measures

Increased Knowledge Of Social And Physical Skills

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	45

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Opportunities need to be expanded for youth to experience a feeling of belonging, independence, generosity, and mastery. Research indicates that youth development is enhanced in a positive manner when learning experiences are designed to address these four elements and to create a safe and structured environment.

What has been done

Overnight camping is one of the longtime 4-H youth development delivery methods that allow youth to test their wings of independence, try new activities not available in their normal home routines, and closely interact with new peers and adult counselors. During the past year, 2,308 young people attended residential camps in Illinois. A study was conducted this year through a survey of parents of campers who attended the 4-H camp in Northern Illinois to determine how effective the camp was in meeting its objectives.

Results

Fifty families [49%] of the 103 who received a mailed questionnaire completed and returned their responses. Of those parent respondents, all 'agreed' or 'strongly agreed' that 4-H Camp provided their children with an opportunity to make friends with others who have similar interests, 49 [98%] experienced unique opportunities to try new things; 45 [90%] developed new social skills; and 40 [88%] developed new physical abilities. When asked about changes that they noticed because of what was learned at 4-H Camp, 40 [88%] 'agreed' or 'strongly agreed' that their children's self-confidence, social skills, and interest in outdoor adventure increased. Thirty-nine [78%] noticed an increase in domestic skills such as keeping their room or area clean, setting the table, taking out the trash, or caring for athletic equipment.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}