V(A). Planned Program (Summary)

Program # 5
1. Name of the Planned Program
Childhood Obesity
☐ Reporting on this Program

V(B). Program Knowledge Area(s)
1. Program Knowledge Areas and Percentage

<table>
<thead>
<tr>
<th>KA Code</th>
<th>Knowledge Area</th>
<th>%1862 Extension</th>
<th>%1890 Extension</th>
<th>%1862 Research</th>
<th>%1890 Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Plant Genome, Genetics, and Genetic Mechanisms</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>502</td>
<td>New and Improved Food Products</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>607</td>
<td>Consumer Economics</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
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<tr>
<td>610</td>
<td>Domestic Policy Analysis</td>
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<td>5%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>701</td>
<td>Nutrient Composition of Food</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>702</td>
<td>Requirements and Function of Nutrients and Other Food Components</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>703</td>
<td>Nutrition Education and Behavior</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>806</td>
<td>Youth Development</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

V(C). Planned Program (Inputs)
1. Actual amount of FTE/SYs expended this Program

<table>
<thead>
<tr>
<th>Year: 2015</th>
<th>Extension</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1862</td>
<td>1890</td>
</tr>
<tr>
<td>Plan</td>
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<tr>
<td>Actual Paid</td>
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<td>0.0</td>
</tr>
<tr>
<td>Actual Volunteer</td>
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<td>0.0</td>
</tr>
</tbody>
</table>

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)
V(D). Planned Program (Activity)

1. Brief description of the Activity

- Conduct research
- Conduct educational workshops, seminars, short courses, conferences
- Partner with other agencies interested in childhood obesity
- Work with the media
- Develop curricula, publications, web sites, distance education materials
- Publish research and Extension articles

2. Brief description of the target audience

Parents, youth, children, consumers, day care providers, healthcare providers, state and county health departments, professional organizations

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>Direct Contacts Adults</th>
<th>Indirect Contacts Adults</th>
<th>Direct Contacts Youth</th>
<th>Indirect Contacts Youth</th>
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</thead>
<tbody>
<tr>
<td>Actual</td>
<td></td>
<td>2665</td>
<td>1578488</td>
<td>17600</td>
<td>20076</td>
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</tbody>
</table>

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

Patent Applications Submitted

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>0</td>
</tr>
</tbody>
</table>
Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

<table>
<thead>
<tr>
<th></th>
<th>Extension</th>
<th>Research</th>
<th>Total</th>
</tr>
</thead>
<tbody>
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<td>2015</td>
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</tr>
<tr>
<td>Actual</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Extension publications written, new or revised
  Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of research publications
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Number of research projects

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>6</td>
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</tbody>
</table>

Output #4

Output Measure

- Number of consultations

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>891</td>
</tr>
</tbody>
</table>

Output #5

Output Measure

- Number of educational workshops or seminars conducted
### Output #6

**Output Measure**

- Number of volunteers

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>225</td>
</tr>
</tbody>
</table>
V(G). State Defined Outcomes

| O. No. | OUTCOME NAME                                                                 | Number of persons who adopt one or more practices to improve food choices | Number of participants who have increased their knowledge of how to raise healthy eaters | Number of persons who increased their knowledge of selection and preparation of foods with reduced fat and/or calories | Number of persons who increased knowledge of USDA serving sizes | Number of participants consuming appropriate serving sizes | Number of participants demonstrating ability to choose or prepare foods with reduced fat and/or calories | Number of youth who increased knowledge of the importance of physical activity | Number of participants who adopt increased physical activity levels | Number of participants who increased their knowledge of the connection between food choices and risk of chronic disease | Number of participants who increased their knowledge of the relationship between nutrition and health | Number of participants who adopt one or more practices to improve food choices and activity levels | CO 3.3 - # Of discoveries, innovations, technologies that relate to how food is enhanced, processed, or prepared that impacts childhood obesity (including sensory qualities) | CO 4 - # Of discoveries, innovations, technologies that relate to understanding the causes of childhood obesity | CO 2.1.a. # of children and youth that understand the benefits of physical activity | CO 2.1.c. # of children and youth that reported increasing their physical activity and/or reducing sedentary time |
1. **Outcome Measures**

   Number of persons who adopt one or more practices to improve food choices

   Not Reporting on this Outcome Measure

2. **Outcome Measures**

   Number of participants who have increased their knowledge of how to raise healthy eaters

   Not Reporting on this Outcome Measure

3. **Outcome Measures**

   Number of persons who increased their knowledge of selection and preparation of foods with reduced fat and/or calories

   Not Reporting on this Outcome Measure

4. **Outcome Measures**

   Number of persons who increased knowledge of USDA serving sizes

   Not Reporting on this Outcome Measure

5. **Outcome Measures**

   Number of participants consuming appropriate serving sizes

   Not Reporting on this Outcome Measure
Outcome #6

1. Outcome Measures

   Number of participants demonstrating ability to choose or prepare foods with reduced fat and/or calories

   Not Reporting on this Outcome Measure

Outcome #7

1. Outcome Measures

   Number of youth who increased knowledge of the importance of physical activity

   Not Reporting on this Outcome Measure

Outcome #8

1. Outcome Measures

   Number of participants who adopt increased physical activity levels

2. Associated Institution Types

   ● 1862 Extension
   ● 1862 Research

3a. Outcome Type:

   Change in Action Outcome Measure

3b. Quantitative Outcome

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>0</td>
</tr>
</tbody>
</table>

3c. Qualitative Outcome or Impact Statement

   Issue (Who cares and Why)
   {No Data Entered}

   What has been done
   {No Data Entered}
Results
{No Data Entered}

4. Associated Knowledge Areas

<table>
<thead>
<tr>
<th>KA Code</th>
<th>Knowledge Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>703</td>
<td>Nutrition Education and Behavior</td>
</tr>
<tr>
<td>806</td>
<td>Youth Development</td>
</tr>
</tbody>
</table>

Outcome #9

1. Outcome Measures

Number of participants who increased their knowledge of the connection between food choices and risk of chronic disease

Not Reporting on this Outcome Measure

Outcome #10

1. Outcome Measures

Number of participants who increased their knowledge of the relationship between nutrition and health

Not Reporting on this Outcome Measure

Outcome #11

1. Outcome Measures

Number of participants who adopt one or more practices to improve food choices and activity levels

Not Reporting on this Outcome Measure

Outcome #12

1. Outcome Measures

CO 3.3 - # Of discoveries, innovations, technologies that relate to how food is enhanced, processed, or prepared that impacts childhood obesity (including sensory qualities)

2. Associated Institution Types
3. Associated Knowledge Areas

<table>
<thead>
<tr>
<th>KA Code</th>
<th>Knowledge Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>701</td>
<td>Nutrient Composition of Food</td>
</tr>
<tr>
<td>702</td>
<td>Requirements and Function of Nutrients and Other Food Components</td>
</tr>
</tbody>
</table>
Outcome #13

1. Outcome Measures

CO 4 - # Of discoveries, innovations, technologies that relate to understanding the causes of childhood obesity

2. Associated Institution Types

● 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>3</td>
</tr>
</tbody>
</table>

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Obesity is a global health problem. Obesity and its associated chronic diseases such as type 2 diabetes and coronary heart disease are leading causes of morbidity in the U.S. A micronutrient selenium exists in various forms with different biological activities. Although selenium is known to exhibit a beneficial function in cancerous cells, its role in metabolically active tissues such as adipose tissue and liver is unknown.

What has been done
Research actions to clarify the beneficial function of selenium, an essential trace mineral, in adipose development and function, is targeted at testing mechanisms underlying prevention of fat cell development in vitro and in vivo.

Results
Findings of the protective function of selenium in obesity and its-associated energy metabolism in fat cells provide new ground to study the health benefit of selenium and selenium-rich foods/fruits. This will extend knowledge in dietary control of adipose biology, and ultimately lead to design of dietary strategies in preventing and/or delaying the development of obesity and its associated chronic diseases.

4. Associated Knowledge Areas

<table>
<thead>
<tr>
<th>KA Code</th>
<th>Knowledge Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>701</td>
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<tr>
<td>702</td>
<td>Requirements and Function of Nutrients and Other Food Components</td>
</tr>
</tbody>
</table>
Outcome #14

1. Outcome Measures

   CO 2.1.a. # of children and youth that understand the benefits of physical activity

2. Associated Institution Types

   ● 1862 Extension

3a. Outcome Type:

   Change in Knowledge Outcome Measure

3b. Quantitative Outcome

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>2948</td>
</tr>
</tbody>
</table>

3c. Qualitative Outcome or Impact Statement

   **Issue (Who cares and Why)**
   Youth are at risk of disconnect with nature by spending time indoors behind the screens of televisions, computers, cell phones, etc. This can lead to a lack of physical activity, which often leads to childhood obesity. Childhood obesity has both immediate and long-term effects on health and well-being. Children become more at risk for health problems such as heart disease, type 2 diabetes, stroke, several types of cancer, and osteoarthritis.

   **What has been done**
   GOALS (Get Outside and Learn Something) Camp was a collaborative effort between Purdue Extension, Lake County Parks and Recreation, and the Boys and Girls Clubs of Northwest Indiana. Limited income children in grades one through four were invited to participate in a three-day camp designed to get them outdoors and involve them in physical activity, away from tech screens of all kinds. 46 children learned about nutrition and the value of daily exercise. They made their own worm compost farms, created herb terrariums, prepared healthy snacks, learned about common pollinators, danced, and participated in several physically challenging relays. Water day included paddle boating, water safety skills, pond water studies, and swimming. The day camp experience provided new knowledge, skills, and understanding that will last a lifetime—all in the great outdoors. Throughout GOALS Camp, adult mentors nurtured a corps of youth leaders, ages 15 to 19, working side-by-side on training and mentoring, which provided valuable experience for these youth.

   **Results**
   Of the 18 children completing post-camp surveys: 88% said they would choose more fruits and vegetables to eat; 72% said they will be more physically active; 72% indicated they know more about being safe in or near water; and 55% said they know more about nature and the environment.
4. Associated Knowledge Areas

<table>
<thead>
<tr>
<th>KA Code</th>
<th>Knowledge Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>703</td>
<td>Nutrition Education and Behavior</td>
</tr>
<tr>
<td>806</td>
<td>Youth Development</td>
</tr>
</tbody>
</table>

**Outcome #15**

1. **Outcome Measures**

   CO 2.1.c. # of children and youth that reported increasing their physical activity and/or reducing sedentary time

2. **Associated Institution Types**

   - 1862 Extension

3a. **Outcome Type:**

   Change in Action Outcome Measure

3b. **Quantitative Outcome**

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>1851</td>
</tr>
</tbody>
</table>

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

   **Issue (Who cares and Why)**

   Childhood and adolescent obesity rates have reached epidemic proportions in the U.S. Sedentary routines found in schools and in the home as well as over-exposure to unhealthy snacks and non-nutritional foods contribute to the pervasiveness of this disease that afflicts America's children. Obese children face significant health risks such as Type 2 diabetes, tooth decay, and depression. One study shows that children who are substantially overweight throughout much of their childhood and adolescence have a higher incidence of depression than those who are not. Low-income children and adolescents are more likely to be obese than their higher income counterparts, but the relationship is not consistent across race and ethnicity groups. At the same time, the U.S. food supply contains an abundance of foods high in energy with appealing taste, but which are low in nutrient content.

   **What has been done**

   Through the leadership of Purdue Extension, the development and ongoing actions of the Adams County and Henry County health coalitions, have taken on childhood obesity in the community. These two counties received $5,000 a year for four years as part of an AFRI grant to mobilize rural low-income communities to assess and improve the ecological environment to prevent childhood obesity. Community activities in Adams County have included: training and administering North Carolina Extension's curriculum, Color Me Healthy, for 15 preschools in the
county to include healthy food options and more physical activity for the children; organizing a "Color Me Healthy" fitness walk for preschoolers and their families; hosting the First Annual Active Living Week; facilitating a community workshop in partnership with the Indiana Department of Health and Health by Design for a walkability study; and providing transportation for seven community citizens to attend the Clinton County "Healthy Communities Workshop". Both Adams County and Henry County health coalitions have collaborated with community organizations/agencies, hospitals, park and recreation departments, libraries and preschools to establish "Born Learning Trails" a national campaign by United Way, with ten interactive signs/learning activities to get children and adults interacting and promote language, literacy and motor skills needed for kindergarten. In Henry County, a display case at the head of the trail shows educational posters about nutrition for youth to read. During Knightstown Jubilee Days, the Girl Scouts hosted a fun walk/run along the preschool trail. Kids could dress up as superheroes and walk/run the trail. Those who completed the trail received goodie bags with a t-shirt, healthy fruit and water bottle.

Results

In Henry County, the health coalition has seen an increase in the number of people walking the trail and a decrease in vandalized property along the trail. Coalition members work at the trail on upkeep, and many individuals that have walked the trail have commented on how nice it looks and how they appreciated the efforts made along the trail. In Adams County, 394 children attended the 15 preschools were the Color Me Healthy program is being implemented. 13 of the 15 preschool directors rated Color Me Healthy materials as "excellent" or "very good." Preschool directors strongly agreed that Color Me Healthy curriculum: increased physical activity of the children (43%), increased children's knowledge about movement and physical activity (43%), increased children's knowledge about healthful eating (64%), and helped raise parents' awareness of the importance of physical activity and nutrition (36%). One preschool director believes preschoolers are at the perfect age to learn about nutrition and exercise. She was happy with the Color Me Healthy curriculum, and stated, "A lot of families didn't understand reading the labels at the stores. So it's really nice that this curriculum enables us to be able to teach the children, and then they go home and sometimes teach the parents, which I think is fabulous."

4. Associated Knowledge Areas

<table>
<thead>
<tr>
<th>KA Code</th>
<th>Knowledge Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>703</td>
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</tr>
<tr>
<td>806</td>
<td>Youth Development</td>
</tr>
</tbody>
</table>
V(H). Planned Program (External Factors)

**External factors which affected outcomes**

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

**Brief Explanation**

V(I). Planned Program (Evaluation Studies)

**Evaluation Results**

Lab research projects monitor progress and completion of tasks to determine effectiveness and accomplishment. Extension programs conduct evaluation surveys to measure change in knowledge and intentions of participants, and follow-up surveys to assess change in behavior or practice, and results of actions. Evaluation examples: evaluation of preschool directors on the strengths and weaknesses of the curriculum, Color Me Healthy; and monitoring of research project objectives, publications, training and mentoring of students, and presentations at scientific research professional speaking engagements.

**Key Items of Evaluation**

Extension trained teachers and staff to implement curriculum in preschools which resulted in increased daily physical activity for children at almost half of the centers. Lab research determined the signaling mechanisms for human taste of dietary fatty acids and how fat properties can be modified to improve their acceptability to help unravel issues related to obesity.