V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Food Safety

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>211</td>
<td>Insects, Mites, and Other Arthropods Affecting Plants</td>
<td>0%</td>
<td>18%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>212</td>
<td>Pathogens and Nematodes Affecting Plants</td>
<td>0%</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>213</td>
<td>Weeds Affecting Plants</td>
<td>0%</td>
<td>4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>215</td>
<td>Biological Control of Pests Affecting Plants</td>
<td>0%</td>
<td>4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>216</td>
<td>Integrated Pest Management Systems</td>
<td>12%</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>311</td>
<td>Animal Diseases</td>
<td>0%</td>
<td>25%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>314</td>
<td>Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals</td>
<td>0%</td>
<td>4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>711</td>
<td>Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources</td>
<td>20%</td>
<td>2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>712</td>
<td>Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins</td>
<td>30%</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>722</td>
<td>Zoonotic Diseases and Parasites Affecting Humans</td>
<td>20%</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>801</td>
<td>Individual and Family Resource Management</td>
<td>18%</td>
<td>4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>802</td>
<td>Human Development and Family Well-Being</td>
<td>0%</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>901</td>
<td>Program and Project Design, and Statistics</td>
<td>0%</td>
<td>4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

<table>
<thead>
<tr>
<th>Year: 2011</th>
<th>Extension</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1862</td>
<td>1890</td>
</tr>
<tr>
<td>Plan</td>
<td>1.7</td>
<td>0.0</td>
</tr>
</tbody>
</table>
2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

<table>
<thead>
<tr>
<th>Extension</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smith-Lever 3b &amp; 3c</td>
<td>1890 Extension</td>
</tr>
<tr>
<td>734150</td>
<td>0</td>
</tr>
<tr>
<td>1862 Matching</td>
<td>1890 Matching</td>
</tr>
<tr>
<td>734150</td>
<td>0</td>
</tr>
<tr>
<td>1862 All Other</td>
<td>1890 All Other</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Develop and Deliver Food Safe South Dakota Program.
- Partner with NMSU to Develop the Virtual Food Safety Labs.
- Conduct Applied Food Safety Education Lab Course III.
- Develop the Food Safety Scientist Website.
- Develop and Deliver Safe Aid - Food Safety Training for Food Pantry Programs.
- Conduct Food to Market Possibilities Workshops.
- Partner with Feeding South Dakota.

2. Brief description of the target audience

- Food Service Establishments and Employees
- Consumers
- Volunteer Food Preparation Sites
- Temporary Food Preparation Sites
- High School Teachers and College Students
- Food Pantries
- Farmers Markets
- Food Growers
- Seniors

3. How was eXtension used?

Upon completion of a crosswalk between the Knowledge Area Classification System and the NIFA Priority Areas, approximately 17% of SDSU Extension programming efforts were expended on Food Safety. For this reporting period, programming was delivered primarily through SDSU Extension Issue-Based Teams. A crosswalk to the NIFA Priority Areas was also performed with the Issue-Based Teams, based on team descriptions and impact indicators. SDSU Extension programming efforts for Food Safety are administered primarily through SDSU's Health and Nutritional Sciences. Integrated Pest Management
is administered through SDSU's Agriculture and Natural Resources program area. SDSU Extension was used to deliver numerous educational activities such as presentations, seminars, and certification workshops.

V(E). Planned Program (Outputs)

1. Standard output measures

<table>
<thead>
<tr>
<th></th>
<th>2011 Direct Contacts Adults</th>
<th>2011 Indirect Contacts Adults</th>
<th>2011 Direct Contacts Youth</th>
<th>2011 Indirect Contacts Youth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual</td>
<td>5337</td>
<td>1800</td>
<td>544</td>
<td>260</td>
</tr>
</tbody>
</table>

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

Patent Applications Submitted

Year: 2011
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

<table>
<thead>
<tr>
<th></th>
<th>2011 Extension</th>
<th>2011 Research</th>
<th>2011 Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual</td>
<td>3</td>
<td>17</td>
<td>0</td>
</tr>
</tbody>
</table>

V(F). State Defined Outputs

Output Target

Output #1
Output Measure
- Enrollment in food preparation certification courses in underserved areas of the state.
  Not reporting on this Output for this Annual Report

Output #2
Output Measure
- Number of workshops for high risk consumers in food handling and preservation.
  Not reporting on this Output for this Annual Report

Output #3
Output Measure
- Disseminate Knowledge about SDSU Extension Food Safety Programs.
### Output #4

**Output Measure**

- Increase Knowledge about Safe Food Practices to Reduce Foodborne Illness.

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>2177</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>1979</td>
</tr>
</tbody>
</table>
### V. State Defined Outcomes Table of Content

<table>
<thead>
<tr>
<th>O. No.</th>
<th>OUTCOME NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Number of people that adopted 1 or more food preparation, storage, or preservation practices for increased access to a safe food supply</td>
</tr>
<tr>
<td>2</td>
<td>Number of Food Safe South Dakota Participants that Received Certification.</td>
</tr>
<tr>
<td>3</td>
<td>Number of Students Completing Applied Food Safety Education Lab Course III.</td>
</tr>
<tr>
<td>4</td>
<td>Number of Safe Aid Participants that Received Certification</td>
</tr>
<tr>
<td>5</td>
<td>Number of People that Gained New Knowledge at Food to Market Workshops.</td>
</tr>
</tbody>
</table>
Outcome #1

1. Outcome Measures

Number of people that adopted 1 or more food preparation, storage, or preservation practices for increased access to a safe food supply

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Number of Food Safe South Dakota Participants that Received Certification.

2. Associated Institution Types

- 1862 Extension
- 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>2011</td>
<td>146</td>
</tr>
</tbody>
</table>

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Centers for Disease Control estimates that each year 48 million Americans get sick from foodborne diseases. Preventing foodborne illness extends far beyond a single program, but specific prevention actions at the local level greatly support the Federal government in implementing its agenda to reduce foodborne diseases.

What has been done
SDSU Extension provided leadership across the state by delivering safe food handling information to consumers, foodservice establishments, volunteer food preparation service sites, and temporary food preparation service sites. SDSU Extension developed and delivered the self-study program Food Safe South Dakota to more than 146 participants.

Results
Participants from across the state representing the majority of the counties were successful in passing the exam. The Food Safe South Dakota certification confirms that the individuals gained or retained knowledge in the following areas:

- Safe Food Storage
4. Associated Knowledge Areas

<table>
<thead>
<tr>
<th>KA Code</th>
<th>Knowledge Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>722</td>
<td>Zoonotic Diseases and Parasites Affecting Humans</td>
</tr>
</tbody>
</table>

Outcome #3

1. Outcome Measures

Number of Students Completing Applied Food Safety Education Lab Course III.

2. Associated Institution Types

- 1862 Extension
- 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>2011</td>
<td>0</td>
</tr>
</tbody>
</table>

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Education of proper food handling is just one partner in preventing foodborne illness. At all levels of industry and government, enhanced lab testing is needed to more quickly identify outbreaks and their causes.

What has been done
Seven high school teachers, 7 undergraduate students from Taiwan and one SDSU Extension Educator completed the Applied Food Safety Education Lab Course III, a course based on the Food Safety Virtual Lab and a hands-on component.
The class focused on:
- Toxins in foods.
- Risks associated with drinking unpasteurized milk.
- Foodborne illness incidence in South Dakota and nationally, and monitoring the food supply through the Food Emergency Response Network (FERN) lab.
All the modules included hands-on laboratory exercises that were the same as the virtual lab. Lectures provided the teachers with additional background material for discussion. The Food Safety Scientist Website was created to provide a medium for teachers to have readily available to use in their classroom. Field trips included a dairy processing plant where students obtained lab samples and swabs to investigate for potential food safety issues within the plant.

**Results**

One of the key objectives was for the students to gain awareness of careers related to the safety of the food supply. All of the teachers and undergraduate students that took the course clearly identified the utilization of food safety issues and careers as an application to science concepts and lab techniques as positive. Seventy-four percent of the students said the virtual labs rated very good to excellent in exposing career paths related to food safety.

All students identified that their knowledge increased in the following areas:
- Awareness for Microbiological and Chemical Lab Safety Practices 93%
- Microbial analysis Techniques 100%
- Pasteurization of Milk 100%
- Food Toxins 100%
- Food Biosecurity 100%

The high school teachers gained the ability to conduct lab techniques that utilize food safety applications. They are presently using the virtual labs, hands-on lab kits and other educational tools to help teach their science, Ag science, food science, and family consumer sciences classes.

Some of the plans by the teachers include:
- Use the tools and labs as they pertain to the unit in life science being studied (the human body and 5 kingdoms of life).
- Use the labs to introduce a lab.
- When collecting and studying bacteria swabs while working with dairy and meat products in the food processing class.

**4. Associated Knowledge Areas**

<table>
<thead>
<tr>
<th>KA Code</th>
<th>Knowledge Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>711</td>
<td>Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources</td>
</tr>
<tr>
<td>712</td>
<td>Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins</td>
</tr>
</tbody>
</table>

**Outcome #4**

1. **Outcome Measures**

   Number of Safe Aid Participants that Received Certification

2. **Associated Institution Types**
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>2011</td>
<td>167</td>
</tr>
</tbody>
</table>

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

**Issue (Who cares and Why)**
One out of 7 people in South Dakota lives at or below the poverty line. An estimated 100,000 people, half of which are children and infants, rely on Feeding South Dakota each year. The Feeding South Dakota program has identified the need to provide food safety training for all of their food pantries across South Dakota.

**What has been done**
SDSU Extension developed and delivered the self-study program Safe Aid to more than 167 participants. This program consists of five concise fact sheets that cover critical, safe food handling practices associated with food pantries that receive and distribute food products. Feeding South Dakota requires all of the food pantries associated with them to complete the program.

**Results**
By completing the Safe Aid ? Food Safety Training for Food Pantry Programs, food pantries across South Dakota can certify that they are doing their part in providing safe food for those in need.
The program consists of these five areas:
- Repackaging Bulk Foods
- Risk Management
- Sanitary Surroundings
- Safe Food Handling
- Food Programs and Foodborne Illness

4. **Associated Knowledge Areas**

<table>
<thead>
<tr>
<th>KA Code</th>
<th>Knowledge Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>722</td>
<td>Zoonotic Diseases and Parasites Affecting Humans</td>
</tr>
</tbody>
</table>
Outcome #5

1. Outcome Measures

Number of People that Gained New Knowledge at Food to Market Workshops.

2. Associated Institution Types

- 1862 Extension
- 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>2011</td>
<td>43</td>
</tr>
</tbody>
</table>

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Many South Dakotans are interested in home-food entrepreneurship; however, safe food is critical to the health and safety of the consumer and proper procedures must be followed.

What has been done
SDSU Extension conducted workshops in 4 communities that taught growers and producers about food preservation and the current South Dakota food-safety laws and standards.

Results
Seventy percent of the 61 attendees reported that most of the information that they gained during the workshops was new to them, and 88% said that they intend to use the information, but primarily for food-safety for home use.

4. Associated Knowledge Areas

<table>
<thead>
<tr>
<th>KA Code</th>
<th>Knowledge Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>712</td>
<td>Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins</td>
</tr>
</tbody>
</table>
Outcome #6

1. Outcome Measures

Review Medicare Part D Plans with Recipients.

2. Associated Institution Types

- 1862 Extension
- 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>2011</td>
<td>1571</td>
</tr>
</tbody>
</table>

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Many seniors have trouble paying for their prescription drugs. Often times it is difficult to understand how the plan works. It is important for seniors to understand how Medicare Part D applies to them, as making the wrong choice can end up costing money.

What has been done
The SDSU Cooperative Extension Service continues to provide assistance to Medicare beneficiaries regarding health coverage and enrollment in Medicare Prescription Drug Plans (Part D). Extension Educators also trained and mentored professionals and volunteers to meet the demands for educational assistance. These efforts have allowed Medicare beneficiaries to save spendable income.

Results
?SDSU Extension Educators served about 20% of the South Dakota beneficiaries seeking assistance in updating their Medicare Part D plans through the Senior Health Information & Insurance Education (SHIINE) program.
?800 of the beneficiaries changed or added a Medicare Part D plan with a potential savings of $473,019 or an average of $591 per person which could be re-directed to meet other budgetary needs.
?Under the leadership of Extension Educators, 967 Medicare beneficiaries were assisted by volunteers with a potential savings of $234,086 or $242 per person
?390 beneficiaries were assisted in problem solving issues related to the various aspects of Medicare
4. Associated Knowledge Areas

<table>
<thead>
<tr>
<th>KA Code</th>
<th>Knowledge Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>801</td>
<td>Individual and Family Resource Management</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

In April 2011, all SDSU Extension employees were informed of the decision for the restructuring of SDSU Extension. Due to the severity of the restructuring, involvement in program reporting became disrupted and less complete. Approximately 45 educators were lost through the restructuring process. Despite the obstacles, many employees persevered and were able to offer successful impacts for this reporting effort.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

For this reporting period, SDSU Extension's programming efforts are delivered through Issue-Based Teams. Approximately 3 of the 33 teams fit under the umbrella of Global Food Security and Hunger. Each of these teams meet face-to-face several times a year and also via webinars and other communication methods periodically. Orchestrated by team leaders, program planning occurs that includes developing impact indicators that are used to help measure the success of the program. These indicators are inclusive, not exclusive to the process of evaluating the program. Most of the evaluation studies for SDSU Extension programs are conducted in-house with some combination of the teams, program leaders, district directors and SDSU Extension administration. The data collection methods for the individual projects vary from pre and post surveys, post then pre surveys, and post interviews, but the most common method is post only survey.

Key Items of Evaluation

Due to the restructuring of SDSU Extension, many factors have made good evaluation results practically impossible. Many changes started taking place half way through the reporting year and many changes will be taking place for at least the next full year. While SDSU's College of Agriculture and Biological Sciences resources have been greatly reduced, SDSU Extension is finding opportunities to make big improvements. With the increased importance of program impact and evaluation, SDSU Extension is taking several steps to become more accountable. Currently, we do not have a single individual dedicated to
evaluation, but we are now in the process of hiring a fulltime evaluator. We are also beta testing a new Program Business Plan that includes a detailed section on evaluation plans. The completion of the plan will be mandatory for all SDSU Extension programs. As we move forward, we will not only know that our programs are successful and making a difference, we will be able to prove it empirically.