

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

**Program # 7**

**1. Name of the Planned Program**

Human Nutrition, Food Safety, and Human Health and Well-Being

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
701	Nutrient Composition of Food	0%		5%	
702	Requirements and Function of Nutrients and Other Food Components	0%		30%	
703	Nutrition Education and Behavior	35%		43%	
704	Nutrition and Hunger in the Population	0%		6%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	40%		7%	
723	Hazards to Human Health and Safety	0%		1%	
724	Healthy Lifestyle	25%		8%	
	<b>Total</b>	100%		100%	

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

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Actual Paid Professional	11.7	0.0	3.7	0.0
Actual Volunteer	1.0	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
915612	0	272971	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
915612	0	153409	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

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

#### 1. Brief description of the Activity

- Research that Focuses on Dietary Micronutrients
- Conduct Research for the Prevention and Treatment of Obesity
- Research to Understand Nutrient-gene Interactions
- Teach Food Safety Programs
- Distribute Fact Sheets to Food Pantries
- Develop Food Preservation Programs
- Conduct Home Food Preservation Workshops
- Conduct Local Food Entrepreneur Programs
- Develop Nutrition and Physical Activity Curriculum
- Train Teens as Teachers
- Collaborate with the University of Nebraska-Lincoln
- Conduct Workshops for the Aging and Senior Citizens

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

- Nutrition and Food scientists
- Health Educators
- Athletes
- Food Service Establishments and Employees
- Minority Audiences
- Food Pantries
- Food Entrepreneurs
- Consumers of Food Products
- Local Schools
- Youth
- Senior Citizens

#### 3. How was eXtension used?

eXtension is not part of this Planned Program.

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

**1. Standard output measures**

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	4178	925145	3752	13534

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

**Patent Applications Submitted**

Year: 2012  
 Actual: 0

**Patents listed**

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

**Number of Peer Reviewed Publications**

2012	Extension	Research	Total
<b>Actual</b>	2	22	24

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

**Output Target**

**Output #1**

**Output Measure**

- Percentage of all Hatch Research Projects in Human Nutrition, Food Safety, and Human Health and Well-Being

Year	Actual
2012	6

**Output #2**

**Output Measure**

- Number of Home Food Preservation Workshops Conducted

Year	Actual
2012	10

**Output #3**

**Output Measure**

- Number of Food Entrepreneur Programs Conducted

<b>Year</b>	<b>Actual</b>
2012	12

**Output #4**

**Output Measure**

- Number of Teens Trained as Teachers for KidQuest

<b>Year</b>	<b>Actual</b>
2012	25

**Output #5**

**Output Measure**

- Number of Healthy Aging Presentations

<b>Year</b>	<b>Actual</b>
2012	18

**Output #6**

**Output Measure**

- Number of Tatanka's Healthy Tales Activity Books Distributed

<b>Year</b>	<b>Actual</b>
2012	880

**Output #7**

**Output Measure**

- Number of Senior Resource Fairs Presented

<b>Year</b>	<b>Actual</b>
2012	8

**Output #8**

**Output Measure**

- Number of Intergenerational Bonds Presentations

<b>Year</b>	<b>Actual</b>
2012	10

**Output #9**

**Output Measure**

- Number of Smart Choices Grocery Store Events

<b>Year</b>	<b>Actual</b>
2012	5

**Output #10**

**Output Measure**

- Number of Food Safety Certification or Recertification Courses Presented

<b>Year</b>	<b>Actual</b>
2012	23

**Output #11**

**Output Measure**

- Number of Articles Posted on igrow Website

<b>Year</b>	<b>Actual</b>
2012	164

**Output #12**

**Output Measure**

- Number of Podcasts Posted on igrow Website

<b>Year</b>	<b>Actual</b>
2012	7

**Output #13**

**Output Measure**

- Number of Radio Programs Posted on igrow Website

<b>Year</b>	<b>Actual</b>
2012	20

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Number of Human Nutrition, Food Safety, and Human Health and Well-Being Hatch Research Projects
2	Number of Food Preservation Workshop Participants
3	Number of Food Entrepreneur Program Participants
4	Number of Schools that Completed the KidQuest Curriculum
5	Number of Healthy Aging Participants
6	Number of Children Reached through the Tatanka's Healthy Tales Activity Books
7	Number of Senior Resource Fairs Participants
8	Number of Intergenerational Bonds Participants
9	Number of Smart Choices Grocery Store Participants
10	Number of Participants that Completed a Food Safety Course

## **Outcome #1**

### **1. Outcome Measures**

Number of Human Nutrition, Food Safety, and Human Health and Well-Being Hatch Research Projects

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

- 1862 Research

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

Change in Knowledge Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2012	7

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

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

Obesity is a major concern within the United States and specifically within South Dakota. It is related to poor nutrition, the lack of physical activity and increased sedentary behavior. Obesity has been associated with increased risk for many chronic diseases. To improve individual's health, scientific discoveries need to be found and translated to practice.

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

Within the College of Agricultural and Biological Sciences, there are 7 Hatch projects that are categorized in the Planned Program of Human Nutrition, Food Safety, and Human Health and Well-Being. The research activities in this program are supported by our partnership with College of Education and Human Sciences. Hatch funded projects include but are not limited to research involving nutrition and physical activity education, induction of the death of fat cells - apoptotic, the understanding of nutrient-gene interaction, enhanced beef consumption, determining the impact of dietary components, and assessing factors that influence eating behavior of young adults.

#### **Results**

Through research, we continue to build a scientific knowledge base to improve and understand nutritional genomics, behaviors that support healthful lifestyles in young adults, apoptosis-based approach to the prevention of obesity, and that consumption of lean beef in runners can prevent loss of lean muscle mass.

In addition, graduate students gain valuable knowledge and skills while collaborating on research projects.

## **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
701	Nutrient Composition of Food
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior
704	Nutrition and Hunger in the Population
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
723	Hazards to Human Health and Safety
724	Healthy Lifestyle

## **Outcome #2**

### **1. Outcome Measures**

Number of Food Preservation Workshop Participants

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

- 1862 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2012	147

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

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

SDSU Extension has seen an increase in requests for information on home food preservation. With the resurgence in gardening and more people that want to sell home processed foods, the demand for USDA Food Preservation Guidelines has increased significantly.

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

SDSU Extension developed food preservation programs and conducted 10 workshops across South Dakota, including several workshops on South Dakota Indian Reservations.

#### **Results**

All participants reported an increase in knowledge of food preservation and nearly all of them identified at least one practice that they will change, especially with using tested processes. This is a small, but important step in reducing foodborne illnesses with South Dakota's families, consumers and entrepreneurs.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

#### Outcome #3

##### 1. Outcome Measures

Number of Food Entrepreneur Program Participants

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Action Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2012	58

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

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

The marketing of home processed and home-baked foods has gained popularity in South Dakota. Farmers Markets are an excellent outlet for entrepreneurs to sell their products, but health rules and regulations must be followed closely to insure the safety of consumers.

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

Food Safety Specialists from SDSU Extension have developed programs to assist entrepreneurs in the selling of their products. The programs focused on food safety at Farmers Markets, starting a licensed commercial kitchen, and the South Dakota Home Processed Food Law. Regulatory issues as well as practices to reduce the risk of foodborne illnesses were addressed. One-on-one assistance was given to help entrepreneurs reach their goals.

###### **Results**

Entrepreneurs that participate in SDSU Extension programs can sell their products according to South Dakota Department of Health regulations and feel confident that their products are safe for the public. In-turn, consumers are rewarded by having a bigger selection of safe, local foods to choose from.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
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712

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

#### **Outcome #4**

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

Number of Schools that Completed the KidQuest Curriculum

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

- 1862 Extension
- 1862 Research

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2012	12

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

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

Youngsters in the 5th and 6th grade typically do not have good health habits without some form of intervention. In South Dakota, 32.5% of youth age 5-19 are overweight or obese. Physical inactivity, poor nutrition, and obesity are major contributors to health problems and chronic diseases.

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

KidQuest, an SDSU Extension signature program was developed to teach 5th and 6th graders about making good decisions about nutrition and physical activity. As a sustainability measure, Teens as Teachers was created to have teens go into the classroom and provide the KidQuest program. By incorporating SDSU students into the research process, under graduates are trained as research assistants and graduate students are able to use the data for their thesis and dissertation requirements. In addition, the program was expanded to Honduras in support of developing international nutrition research and education.

###### **Results**

Approximately 425 youth were reached through the KidQuest programs. A post program survey of one of the larger school districts reported that 85% of the participants increased the amount of fruits and vegetables they consumed. Ninety-two percent of the same district reported making healthier snack selections with 68% of them consuming fewer sweets. There was also a reduction in the consumption of the number of sweetened beverages drank each week.

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

<b>KA Code</b>	<b>Knowledge Area</b>
703	Nutrition Education and Behavior
724	Healthy Lifestyle

**Outcome #5**

**1. Outcome Measures**

Number of Healthy Aging Participants

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2012	160

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

**Issue (Who cares and Why)**

Middle-aged and older adults in rural communities do not always have the resources available to take responsibility for their own well-being. Community members often want to exercise but are not willing to pay fees to join a fitness center.

**What has been done**

Through a needs assessment focus group, two South Dakota communities identified health concerns. The community groups were coached to implement health related changes and both communities purchased treadmills and exercise bikes.

**Results**

The participants are using the exercise equipment on a regular basis and all of them report an increase in strength and flexibility. Health benefits reported are a decrease in blood pressure and blood cholesterol levels, as well as some participants have been able to quit taking cholesterol medications

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
724	Healthy Lifestyle

## **Outcome #6**

### **1. Outcome Measures**

Number of Children Reached through the Tatanka's Healthy Tales Activity Books

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

- 1862 Extension

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

Change in Knowledge Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2012	540

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

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

South Dakota American Indian children have higher than average health risks for obesity and diabetes. Adopting a healthy diet and active lifestyle can decrease the chances for these at-risk children to develop these diseases. Education at an early age, in a culturally sensitive way, and with repeated exposure encourages adoption of healthy practices.

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

Tatanka's Healthy Tales is a childrens activity book used to deliver and encourage healthy eating and physical activity information to 2nd and 3rd graders. The activity books and other supplementary materials printed in the Lakota language were distributed to teachers in schools located on or near Native American reservations.

#### **Results**

Teachers in more than 21 schools with high numbers of American Indian children now have a resource to teach their Lakota language as well as help children practice with healthy lifestyle messages. Schools have indicated appreciation of the resources and intend to use it again in lessons for the subsequent school year. As other schools and agencies hear about the program, they too are requesting the materials. Surveys on awareness and receptiveness to healthy behaviors are being analyzed.

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

<b>KA Code</b>	<b>Knowledge Area</b>
703	Nutrition Education and Behavior
724	Healthy Lifestyle

## **Outcome #7**

### **1. Outcome Measures**

Number of Senior Resource Fairs Participants

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

- 1862 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2012	950

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

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

Senior citizens often are not aware of the services available to them that assist in healthy living or services that help them continue to live independently.

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

Resource fairs for senior citizens were held in several South Dakota communities to increase the awareness of services available to them. Attendees were offered free health screenings and flu shots, and learned about food safety and how exercise and diet improve health.

#### **Results**

Telephone interviews three months after the senior resource fairs showed that many of the participants increased their knowledge of services available to them. Many of them also reported an increase in their consumption of fruits and vegetables and also in increase in their exercise activities.

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

<b>KA Code</b>	<b>Knowledge Area</b>
703	Nutrition Education and Behavior
724	Healthy Lifestyle

**Outcome #8**

**1. Outcome Measures**

Number of Intergenerational Bonds Participants

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2012	300

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

**Issue (Who cares and Why)**

Senior citizens need to be involved in their communities to help them maintain their well-being. The Intergenerational Bonds program focuses on building and strengthening bonds between children and senior citizens.

**What has been done**

SDSU Extension partnered, coordinated, provided leadership, and taught several of the sessions for the intergenerational activities. The seniors read books and assisted in teaching programs to the children about gardening, nutrition, culture and exercise.

**Results**

The children and the seniors had a positive experience interacting with each other. Partnerships were developed with the staff from the South Dakota Children's Museum, Foster Grandparents and RSVP volunteers.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
703	Nutrition Education and Behavior
724	Healthy Lifestyle

## **Outcome #9**

### **1. Outcome Measures**

Number of Smart Choices Grocery Store Participants

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

- 1862 Extension

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

Change in Knowledge Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2012	3500

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

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

Grocery shoppers with limited resources need assistance in increasing their knowledge and skills in order to get the most value for their food dollar. Information on how to make healthy food choices and how to shop for value can improve a families? diet and therefore their health.

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

Through SDSU Extension and Family and Consumer Sciences, the Family Nutrition Program conducts activities at grocery stores that demonstrate shopping skills and resource management to educate shoppers on how to improve their choices when purchasing food. The grocery stores chosen have a high percentage of limited resource customers. The shoppers received food samples, fact sheets, and low cost choices for healthy recipes. The materials were also distributed to other agencies, schools, and senior feeding sites.

#### **Results**

Shoppers that were interviewed at the events indicated that they intend to adopt new healthy eating guidelines, increase price comparison and label reading practices, and adopt food safety procedures. A partnership with the National Relief Charities organization was also formed to adapt the materials for their use in two American Indian Reservation communities.

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

<b>KA Code</b>	<b>Knowledge Area</b>
724	Healthy Lifestyle

## **Outcome #10**

### **1. Outcome Measures**

Number of Participants that Completed a Food Safety Course

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

- 1862 Extension

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

Change in Knowledge Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2012	595

### **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. In South Dakota, it is estimated that in 2011, 337 hospitalizations and eight deaths resulted from foodborne illness.

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

Most cases of foodborne illness can be prevented through education on proper cooking, cooling, storage, and serving of food. SDSU Extension Food Safety Specialists conducted food safety Food Service Manager Sanitation Certification and Recertification courses across South Dakota. Fact sheets developed by SDSU Extension were distributed to all food pantries across the state through the Feeding South Dakota Program.

#### **Results**

Ninety-five percent of the individuals participating in ServSafe Foodservice Manager Certification received their certification, with nearly all participants passing the exam the first time it was taken. Seventeen percent of the participants were Native Americans, and one Native American is now teaching his own food safety certification program on the Pine Ridge Reservation. An additional 87 people successfully completed their recertification program provided through Extension. The foodservice establishments in South Dakota meet foodservice standards that are respected nationally.

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

<b>KA Code</b>	<b>Knowledge Area</b>
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

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

### **External factors which affected outcomes**

- Economy

### **Brief Explanation**

The effects of restructuring SDSU Extension in October of 2011 are likely being felt with the greatest impact during this reporting period. With the huge loss of staff and the turn-around time to hire new employees, many vacancies were created. This means less programming and less data to work with in all areas of this report.

Funding cuts continue to impact South Dakota State University.

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

### **Evaluation Results**

Due to continued budget constraints, a full-time evaluator has not been hired. However, we are diligent in our efforts to teach staff how to collect and report meaningful, useful programming data. This includes establishing baseline data, templates that correspond to NIFA reporting, and writing impacts that show strong results.

#### **Healthy Aging**

160 Participants

- 40% have seen a decrease in their blood cholesterol levels
- 20% of those on cholesterol medicine have been able to get off the medicine
- 75% feel less stressed
- 30% have decreased their blood pressure
- 100% report an increase in strength and flexibility

#### **Senior Resource Fairs**

Telephone interviews were completed with a random number of attendees three months after participation in the senior resource fairs and they revealed the following changes:

- 25% have increased their exercise
- 40% are eating more fruit and vegetables
- 10% decreased the amount of salt in their diet
- 10% increased the hours they volunteer each month
- 63% increased their knowledge of service available to them
- 37% received their flu shot or a health screening at the event

### **Key Items of Evaluation**

### **Healthy Aging**

160 Participants - since the participants started exercising, 100% report an increase in strength and flexibility. Health benefits reported are a decrease in blood pressure and blood cholesterol levels, as well as some participants have been able to quit taking cholesterol medications.

### **Senior Resource Fairs**

A random number of telephone interviews revealed that seniors that participated in the resource fairs increased the amount of exercise they do and are eating more fruits and vegetables.