

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

**Program # 4**

**1. Name of the Planned Program**

Childhood Obesity

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

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
603	Market Economics	0%	0%	25%	
701	Nutrient Composition of Food	5%	5%	15%	
702	Requirements and Function of Nutrients and Other Food Components	0%	0%	10%	
703	Nutrition Education and Behavior	95%	95%	50%	
	<b>Total</b>	100%	100%	100%	

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

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

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	97.0	9.0	8.0	0.0
Actual Paid Professional	99.0	12.0	13.3	0.0
Actual Volunteer	77.0	5.0	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
1878044	616400	325922	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
8162471	616400	550969	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
5401045	117185	476726	0

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

## 1. Brief description of the Activity

UT and TSU Extension used the Power U curriculum in Tennessee schools and afterschool programs. Extension personnel and volunteers used the curriculum to teach diet quality to young adolescents. The program was delivered through 10 interactive lessons. Extension obesity prevention programs emphasized the following:

- how to use MyPyramid.gov and following Dietary Guidelines.
- how to use the Healthy Plate Method.
- decreasing consumption of high-fat foods like fried foods, bologna, hot dogs, etc.
- increasing consumption of fruits, vegetables and whole-grains.

We conduct applied and basic research in food-borne risks and nutrition to address high priority issues for consumers of food products. We disseminate information gained from these studies to food industries and consumers through outreach programs, including workshops and educational events at the county level, and through a variety of publications.

Research projects in food safety are multi-pronged in their objectives. A major thrust is characterization of the antimicrobial activity of novel natural (i.e., plant-, animal- or microbial-based) compounds and better targeting through controlled-delivery encapsulation systems and incorporation into nanofibers and packaging films. Encapsulation strategies include micelles, liposomes, chitosans, supercritical carbon dioxide, high pressure homogenization and ultrasound. Novel molecular biology strategies are used to identify stress mechanisms in bacteria that allow them to resist interventions.

Studies are underway on how non-thermal processing (high pressure, ultrasound, solvents) affect the functional properties of proteins for food and non-food applications. Supercritical carbon dioxide will be used to produce biopolymers encapsulation systems for flavors and nutraceuticals and to modify functional properties of proteins.

## 2. Brief description of the target audience

Tennesseans targeted include consumers and youth. Because of the prevalence of obesity in the state, all consumers are potentially members of the target audience. However, the TNCEP and EFNEP programs will be targeted to the state's limited resource population. In addition, the TSU Food Nutrition Education Program will be targeted to eligible food stamp recipients.

## 3. How was eXtension used?

Tennessee is represented by 108 eXtension members in 42 of the 59 approved Communities of Practice (CoP). Tennessee Extension personnel have addressed over 800 Frequently Asked Questions through eXtension.

This Childhood Obesity Planned Program was enhanced through the service of

- 12 Tennessee Extension personnel on the "Families, Food and Fitness" CoP, and the leader of this CoP is the Associate Dean of Family and Consumer Sciences for UT Extension.
- two Tennessee Extension personnel on the "A,B,C's of Omega 3's" CoP.

Tennessee Extension personnel shared emerging research, implementation strategies, outcome measurement, and evaluation protocols with their CoP colleagues.

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

### 1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	136990	11835186	659536	8120

**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**

2011	Extension	Research	Total
<b>Actual</b>	1	14	15

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

**Output Target**

**Output #1**

**Output Measure**

- Number of exhibits displayed to promote program awareness and participation.

Year	Actual
2011	2071

**Output #2**

**Output Measure**

- Number of research-based publications distributed as part of this program.

Year	Actual
2011	189904

**Output #3**

**Output Measure**

- Hold symposium to educate the nutrition science community about the use of systems genetics as a tool for linking genetic variation to nutrient metabolism and energy balance and the overlying effects on health and disease (Moustaid-Moussa).

Not reporting on this Output for this Annual Report

**Output #4**

**Output Measure**

- A Bayesian Markov chain Monte Carlo (MCMC) procedure was developed to estimate consumer demand systems with censored dependent variables. There is a large menu of demand system estimators and they all have shortcomings. The Bayesian estimator offers a practical solution to a very difficult problem, which is expected to be very useful to empirical analysts struggling with the censoring issues in micro-level demand systems. (Yen)

<b>Year</b>	<b>Actual</b>
2011	1

**Output #5**

**Output Measure**

- A positive association between smoking cessation and body weight was found. Differentiated effects of quitting smoking on BMI are found among quitters by gender, between age groups, and by length of time since quitting smoking. Major conclusion: the price that must be paid, in terms of weight gain to enjoy the health benefits of smoking cessation, is trivial even for the obese population. (Yen)

<b>Year</b>	<b>Actual</b>
2011	1

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

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

O. No.	OUTCOME NAME
1	Tennessee Shapes Up: Number of participants who decreased consumption of high-fat foods such as chips, fast food, fried foods, sausage, bacon, bologna, hot dogs, etc.
2	Tennessee Shapes Up: Number of participants who decreased consumption of high-sugar foods and sweetened beverages, such as soft drinks, Kool Aide type beverages, sweetened tea, etc.
3	Tennessee Shapes Up: Number of participants who increased consumption of dairy foods.
4	Tennessee Shapes Up: Number of participants who increased consumption of fruits.
5	Tennessee Shapes Up: Number of participants who increased consumption of vegetables.
6	Tennessee Shapes Up: Number of participants increased consumption of whole grains.
7	Tennessee Shapes Up: Number of participants who improved their blood sugar.
8	Tennessee Shapes Up: Number of participants who improved their cholesterol levels.

## **Outcome #1**

### **1. Outcome Measures**

Tennessee Shapes Up: Number of participants who decreased consumption of high-fat foods such as chips, fast food, fried foods, sausage, bacon, bologna, hot dogs, etc.

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

- 1862 Extension
- 1890 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2011	2708

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

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

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

## **Outcome #2**

### **1. Outcome Measures**

Tennessee Shapes Up: Number of participants who decreased consumption of high-sugar foods and sweetened beverages, such as soft drinks, Kool Aide type beverages, sweetened tea, etc.

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

- 1862 Extension
- 1890 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2011	2708

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

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

**Outcome #3**

**1. Outcome Measures**

Tennessee Shapes Up: Number of participants who increased consumption of dairy foods.

**2. Associated Institution Types**

- 1862 Extension
- 1890 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2011	20841

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

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

**Outcome #4**

**1. Outcome Measures**

Tennessee Shapes Up: Number of participants who increased consumption of fruits.

**2. Associated Institution Types**

- 1862 Extension
- 1890 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2011	26391

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

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

## **Outcome #5**

### **1. Outcome Measures**

Tennessee Shapes Up: Number of participants who increased consumption of vegetables.

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

- 1862 Extension
- 1890 Extension

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

Change in Action Outcome Measure

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

<b>Year</b>	<b>Actual</b>
2011	25444

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

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

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

## **Outcome #6**

### **1. Outcome Measures**

Tennessee Shapes Up: Number of participants increased consumption of whole grains.

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

- 1862 Extension
- 1890 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2011	19196

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

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

**Outcome #7**

**1. Outcome Measures**

Tennessee Shapes Up: Number of participants who improved their blood sugar.

**2. Associated Institution Types**

- 1862 Extension
- 1890 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2011	162

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

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

**Outcome #8**

**1. Outcome Measures**

Tennessee Shapes Up: Number of participants who improved their cholesterol levels.

**2. Associated Institution Types**

- 1862 Extension
- 1890 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2011	184

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

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

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

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

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

- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Programmatic Challenges

### **Brief Explanation**

{No Data Entered}

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

### **Evaluation Results**

#### **Nutrition Education**

UT Extension Nutrition Education Programs reach approximately two million annually through group meetings, worksite sessions, direct mail, television, and radio programs. Nutrition education studies have found cost/benefit ratio of \$1.00/\$10.64. This translates to a return of over \$190.9 million for the investment in UT Extension's nutrition education programs for the state of Tennessee.

### **Key Items of Evaluation**

#### **Nutrition Education**

UT Extension Nutrition Education Programs reach approximately two million annually through group meetings, worksite sessions, direct mail, television, and radio programs. Nutrition education studies have found cost/benefit ratio of \$1.00/\$10.64. This translates to a return of over \$190.9 million for the investment in UT Extension's nutrition education programs for the state of Tennessee.