V(A). Planned Program (Summary)

Program # 12

1. Name of the Planned Program

Nutrition and human health --Research

☑ 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%	0%	10%	
702	Requirements and Function of Nutrients and Other Food Components	0%	0%	30%	
703	Nutrition Education and Behavior	0%	0%	10%	
704	Nutrition and Hunger in the Population	0%	0%	10%	
723	Hazards to Human Health and Safety	0%	0%	10%	
724	Healthy Lifestyle	0%	0%	20%	
802	Human Development and Family Well-Being	0%	0%	10%	
	Total	0%	0%	100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	1.0	0.0
Actual Paid Professional	0.0	0.0	3.3	0.0
Actual Volunteer	0.0	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**
0	0	72959	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	0	72959	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

Projects will relate to finding ways to reduce the incidence of childhood obesity through the study of foods and nutrient values and ways to improve physical activity. Projects may also relate to managing change that would lead to decreases in obesity.

2. Brief description of the target audience

Florida residents
parents and children

3. How was eXtension used?

{No Data Entered}

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

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
Actual	0	3	3

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- {No Data Entered}

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Identified ways to increase acceptance of sustainable change in eating and exercise
2	Increase health through nutrition education
3	Reduce the risk of mosquito borne illness

Outcome #1

1. **Outcome Measures**

Identified ways to increase acceptance of sustainable change in eating and exercise

Not Reporting on this Outcome Measure

Outcome #2

1. **Outcome Measures**

Increase health through nutrition education

2. **Associated Institution Types**

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Eating more fruits and vegetables promotes better health by preventing many types of chronic diseases such as cancers and heart diseases. Florida ranks 2nd and 3rd for fruit or vegetable production. Many of the produces are unique to the subtropical climate. Phytonutrients are natural components in fruits and vegetables that are thought to be responsible for their health benefits. Most of phytonutrients also act as antioxidants.

What has been done
This research will uncover the antioxidant capacities and phytonutrients in Florida-grown fruits and vegetable. New strategies will be developed to extend the shelf life of those produces and preserve the beneficial phytonutrients. Obesity, hypertension, and high blood level of cholesterol are severe threats to the public health. High-fat and high-fructose diet can cause those conditions, but fruits and vegetables can prevent them. Cell culture models will be designed to simulate such a situation in order to test the preventative efficacy of fruits and vegetables.

Results

Impact: Four peer reviewed papers have been published and presented at the annual food and nutrition meetings. The first international meeting on functional foods was successfully held at the department in May 2011. This three-day event gave faculty the opportunity to exchange ideas and gave graduate students the opportunity to meet researchers from different countries. Three graduate students and one undergraduate student were supported by the same program to travel to France for two weeks. Students visited universities in three cities and learned the international development of functional foods. We continue to make progress on phytochemical research. We found abscisic acid enhanced the phytochemical content of muscadine grapes but did not affect high bush blueberries. We also reported that polyphenols from grapes and berries inhibited protein glycation by scavenging harmful carbonyls.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #3

1. Outcome Measures

Reduce the risk of mosquito borne illness

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Arboviral surveillance is an important component of the Florida Medical Entomology Laboratory's (FMEL) legislatively mandated mission to conduct research to serve Florida residents and mosquito control programs. The economic impact of mosquito-borne diseases on Florida Counties cannot be easily measured. The confusion, expense, and panic associated with an epidemic that seemingly arises out of nowhere, similar to the 1999 New York City WN epidemic, is unacceptable. Epidemics of some mosquito-borne viruses are predicable. For example, the FMEL and Florida surveillance programs indicated the risk of epidemic SLE transmission in south Florida in the early summer of 1990, eight weeks prior to the first human case. While it is impossible to prevent all arboviral cases in humans, domestic animals, and wildlife, it is possible, through early warning, to mitigate the impact that these important pathogens have on the economy of Florida and to more appropriately manage the health and well-being of Florida

residents.

What has been done
The purpose of this proposal is to continue the University of Florida, FMEL research dealing with the monitoring and prediction of mosquito-borne disease outbreaks within the state.

Results
Impact: Infection of humans, domestic animals, and wildlife by mosquito transmitted viruses and other pathogens poses a significant public health threat in Florida. The development of long term disease surveillance monitoring protocols at the UF, FMEL allows the real-time prediction and reporting (at http://mosquito.ifas.ufl.edu/MWTD Risk Model.htm) of existing pre-epidemic conditions that suggest epidemic and epizootic transmission is possible. Knowledge and publication of these conditions early in the year provides sufficient time for appropriate public health responses including vector control, media contact, and the issuance of Medical Advisories and Medical Alerts prior to the onset of epidemic and epizootic disease transmission.

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety

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

Florida is still being heavily impacted by the economic situation. Public higher education in Florida has lost more than 50% of state funding and research has been impacted by other losses caused indirectly by the economic down turn including a reduction of funding opportunities available at the national level. In some cases faculty who leave or retire are not being replaced because of economic issues. Changes in state, county and federal appropriations can also affect the outcomes related to the Florida research land-grant mission. Because of limited resources in Florida and continuing devolution research projects can always be affected by changing public and governmental priorities policies, regulations and laws.

Natural and national disasters can also affect research field studies and multistate

research. Natural disasters such as tropical storms and hurricanes are common annual occurrences in this state and often cause severe damage to plants and the environment in which active research is taking place.. Severe weather conditions such as droughts frequently led to large-scale fires which can also impact studies. In 2012 we were heavily impacted by severe storms and fires. We also had other weather extremes such as floods leading to large scale damage especially along the coastal regions and the panhandle of the state. All of these can have a direct and indirect impact on research.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Nutrition plays an important role in human health. Keep the population safe from contaminated foods and reducing obesity through better research in the impact food plays in human obesity are important areas of research for UF/IFAS.

Key Items of Evaluation

Food Safety

With the declining proportion of food expenditure relative to household income, more knowledge about the health benefit of food, increasing awareness of food-borne disease and more concerns about the environment, consumers are increasingly demanding foods that are assured to be healthier, safer, more palatable, and more environment or animal friendly. An accurate estimate of consumer preference and accurate prediction of consumer purchase behavior based on quality attributes is the premise to know what and how to satisfy consumers? demand for food quality. Wrong estimates of consumer preferences will lead to faulty or inefficient government policy and failed market strategy, which may result in economic loss to society, the food industry, production agriculture, and taxpayers. However, accurately estimating consumer preferences is difficult. This task is hindered by the complicated relationships among food quality attributes and the lack of standard research methods to truly reveal consumer preferences for product quality. This project will investigate the interactions between different types of food product attributes and explore the divergence in consumer preferences gained from different methods. The results will provide needed information to policy makers and industry who are interested in consumer preferences as well as benefit researches using those methods to study consumer preferences.

Impact: Accurately identifying consumer demand helps develop more efficient markets and policies that improve social welfare. The study of farmers' market consumer helps future farmers' market development by determining the most important factors affecting consumer shopping at the farmers' market. The study on Chinese consumer preference for orange juice help juice industries in the U.S. to gain market opportunities by providing the products that are most likely accepted by Chinese consumers. The third study help develop new methods or approaches to estimate consumer willingness to pay by determining the most important factors that may affect the estimates from different methods.

Reducing obesity

Treatment of overweight in young people is challenging and involves addressing the family environment as well as individual lifestyle choices, particularly among younger children who often have minimal control over their meal and snack options. IFAS Extension specialistson the Extension Family Lifestyle Intervention Project (E-FLIP for Kids)(2009-14), which is studying family-based and parent-only behavioral interventions for weight management in children 7-12 years of age at Extension offices in medically underserved

rural counties. This project is informing the development and implementation of Extension outreach activities to address the growing problem of childhood obesity in Florida.