V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

HUMAN NUTRITION, HEALTH & FOOD SAFETY

☑ 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
702	Requirements and Function of Nutrients and Other Food Components	10%		57%	
703	Nutrition Education and Behavior	15%		35%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	75%		8%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	9.0	0.0	9.0	0.0
Actual Paid Professional	4.3	0.0	1.0	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**
129665	0	127172	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
129665	0	127172	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

Tucson Village Farm: Promoting a Healthy Lifestyle

Issue

According to 2011 statistics from the Arizona Department of Health Services, Arizona has the 15th highest rate of obese youth, ages 10 to 17, in the nation. The Center for Disease Control and Prevention reported in 2011 that among high school students in AZ 28% were either overweight (15%) or obese (13%). It also reported that 30% of children ages 2 to 4 participating in the WIC program were obese. Childhood obesity is considered a major health problem in the United States and prevention is a key public health strategy (CDC 2011). The 2011 US Census Bureau statistics show Tucson as the 6th poorest city among the nation's large metropolitan areas with a poverty rate of 20.4% as compared with the national average of 15.9%. Getting kids engaged in physical activity and developing healthier eating habits are strategies for combating obesity. Exposure to and availability of fresh food can lead to healthier eating habits. Research conducted by Canaris (1995) showed that children who grow their own food are more likely to eat fresh fruits and vegetables and to express a preference for these foods. Additionally, studies have shown that children who garden experience increased self-esteem (Cammack, et al., 2002), score significantly higher on science achievement tests (Klemmer, et al., 2005), and show a significant increase in self-understanding and the ability to work in groups (Robinson & Zajicek, 2005).

What has been done?

Tucson Village Farm is an innovative program that fosters healthy living and lifestyle choices. TVF works closely with local interest groups including community gardens, youth serving organizations, campus faculty and stakeholders to determine programs (hands-on classes, camps, workshops, field days, etc.) and create events that meet community needs and interests. TVF works with the Family Consumer and Health Science agent to decide best practices for nutrition component. TVF targets low-income at-risk youth, as defined according to US census data. Offering programs and activities which allow direct access to healthy food is one of TVF s goals. TVF modifies and changes programming based on evaluations conducted. The facility includes an acre of food production, four covered outdoor learning areas, irrigation, fencing, two barns (one used as a classroom and one for storage) and a newly donated shade structure. In addition to Extension staff (agent, part-time program coordinator, instructional specialists, Americorps volunteers, VISTA members, UA students serving as externs and community volunteers. TVF activities reach a variety of ages, from toddlers, preschoolers and K-12 through college and adult, including school groups, families and community organizations.

Impacts are detailed in the Report Overview

SNAP-Ed (Supplemental Nutrition Assistance Program-Education)

Issue

The SNAP-Ed program is a federal/state partnership supporting nutrition education for people eligible for the Supplemental Nutrition Assistance Program (SNAP--formerly known as Food Stamp Nutrition Education). In Arizona, the USDA-funded program is associated with the Arizona Nutrition Network, which partners with the University of Arizona Cooperative Extension. The program's mission is to help low income people buy the food they need for good health and to reduce disease among all people living in Arizona. Nutrition messages have been integrated into food safety, obesity and disease prevention, physical activity, and gardening activities.

What has been done

Arizona Cooperative Extension faculty, in partnership with local social service agencies, county health departments and other community organizations in the Arizona Nutrition Network teach a variety of programs to food stamp-eligible families throughout the state. The theme "Champions for Change--MyPlate" encourages healthy eating by consuming more fresh fruits and vegetables, more whole grains,

using healthy recipes and increasing daily physical activity.

The SNAP-Ed program was implemented in 8 Arizona counties using matching funds from county faculty and staff, in schools with more than 50 percent free and reduced lunches; with parks and recreation and YMCA partner staff operating in low income areas; and with senior centers and food banks. Nutrition education was delivered in 419 sites which included community centers, emergency food assistance sites, shelters, SNAP offices, public housing, Head Start, Parks and Recreation and public schools. Local staff and volunteers distributed educational materials through classes, workshops, health fairs, after school programs, parents' groups, community and wellness centers, food banks and other venues.

Impacts are detailed in the Report Overview

Smartphone Diagnostics & Fast PCR Assay for Food Safety & Animal Diseases

Issue

Foodborne diseases and animal diseases are widespread and growing public health problems, both in developed and developing countries. Detecting foodborne contaminants or animal pathogens usually involves collecting a food or animal sample, sending it to a laboratory and waiting for the samples to be filtered, incubated/amplified, tested and identified under a microscope or gel-doc device. If a critical infection is suspected, say for highly dangerous E. coli O157:H7 or foot-ant-mouth disease, the pathogen may already have multiplied and spread before the report arrives days later.

What has been done

1. Previously, a series of "lab- on-a-chip" (LOC) devices was developed at the Biosensors Laboratory in the College of Agriculture at the University of Arizona. The silicon-based LOC has been replaced with paper platform, called paper microfluidics, and subsequent optical detection has been made with the use of a smartphone, utilizing its white LED flash as a light source, its digital camera as a light detector, and a software application for data processing.

2. Another new method of conducting polymerase chain reaction (PCR) in much faster assay time, called wire-guided droplet PCR device, has been invented by the Biosensors Laboratory at the University of Arizona. The device is potentially handheld, very fast (down to 3 min for thermocycling and <15 min of total assay time), and can detect the presence of pathogens directly from whole blood (not possible with conventional PCR techniques).

Impacts are detailed in the Report Overview

2. Brief description of the target audience

General public, educators, health professionals, extension educators

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	166115	200000	22753	50000

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

Patent Applications Submitted

Year:	2012
Actual:	2

Patents listed

VIBE Pedometer

Plant Antimicrobial Washes for Use on Organic Leafy Greens

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	8	114	122

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Effectiveness of the research program will be based on publications, external grant support, and integration into existing extension programs

Year	Actual
2012	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Create awareness and increase knowledge
2	Number of individuals adopting recommendations for nutrition and health

Outcome #1

1. Outcome Measures

Create awareness and increase knowledge

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

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

KA Code	Knowledge Area
702	Requirements and Function of Nutrients and Other Food Components
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #2

1. Outcome Measures

Number of individuals adopting recommendations for nutrition and health

2. Associated Institution Types

- 1862 Extension
- 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)
{No Data Entered}

What has been done
{No Data Entered}

Results
{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
702	Requirements and Function of Nutrients and Other Food Components
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
- Appropriations changes
- Public Policy changes
- Government Regulations

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}