

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Food Safety and Nutrition

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	5%		5%	
702	Requirements and Function of Nutrients and Other Food Components	0%		20%	
703	Nutrition Education and Behavior	45%		35%	
704	Nutrition and Hunger in the Population	0%		25%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	25%		0%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	25%		15%	
Total		100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	2.6	0.0	2.5	0.0
Actual Paid	0.8	0.0	2.6	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
57699	0	145559	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
52316	0	107319	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

Food Safety:

Continue to provide HACCP and sanitation education programs to food processors (e.g. seafood, meat/poultry)
 Host an annual Food Safety Conference for public and private stakeholders
 Maintain the Good Agricultural Practices (GAP) Program for commercial growers of fruit and vegetables and continue to update program materials
 Oversee accredited online training and examinations for Food Safety Manager courses (e.g. non-profit agencies, NFS nutrition and dietetics students)
 Update and maintain website and listserv
 Implement food preservation classes in a variety of formats for consumers (e.g. lecture only, hands-on and demonstration)
 Outreach education to farmer market managers
 Continue to provide volunteer food service food safety training
 Develop and implement outreach program targeting food entrepreneurs
 Continue community lecture series on marine-related topics
 Continue collaboration with RIDOH and RIDEM on a variety of food safety outreach initiatives

Nutrition:

Collect Data on targeted audiences
 Conduct Fitness testing and body composition analysis
 Administer Survey and questionnaires
 Conduct Blood analysis and calculate dietary intake
 Facilitate partnership with diverse communities
 Refine curriculum and teacher training programs
 Test interventional modalities for health maintenance and obesity prevention
 Analyze data and evaluate outcomes

Food Security

Assess the diet quality of targeted low-income, vulnerable populations.
 Assess the food security status of targeted low-income, vulnerable populations.
 Assess the food resource management and food safety practices of the target audience.
 Develop and implement assessment tools, curriculum, print materials and social marketing campaigns.
 Evaluate the effectiveness of interventions and materials related to behavior change.
 Facilitate and strengthen community partnerships.

2. Brief description of the target audience

Food Safety:

Food industry and food service workers and managers, food processors, consumers, agricultural producers, home gardeners, school administrators, school-aged children and their caregivers, special needs students, teachers, community volunteers, Master Gardener volunteers.

Nutrition:

Lean and obese adults; ethnic men and women; low-income school age children and families

Food Security:

Low-income, Food Stamp eligible and participating families, children and older adults.

3. How was eXtension used?

na

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	8741	340880	11161	1822

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

Patent Applications Submitted

Year: 2014
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
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Actual	1	12	13
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V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Peer reviewed publications

Year	Actual
2014	9

Output #2

Output Measure

- Abstracts

Year	Actual
2014	7

Output #3

Output Measure

- Professional training sessions

Year	Actual
2014	2

Output #4

Output Measure

- Volunteer training

Year	Actual
2014	6

Output #5

Output Measure

- Conferences hosted

Year	Actual
2014	3

Output #6

Output Measure

- School based training sessions

Year	Actual
2014	314

Output #7

Output Measure

- Website development and refinement

Year	Actual
2014	5

Output #8

Output Measure

- Student training

Year	Actual
2014	159

Output #9

Output Measure

- Intervention studies

Year	Actual
2014	3

Output #10

Output Measure

- Workshops

Year	Actual
2014	650

Output #11

Output Measure

- Scientific/professional presentations

Year	Actual
2014	11

Output #12

Output Measure

- Thesis/dissertation

Year	Actual
2014	14

Output #13

Output Measure

- Public service announcements

Year	Actual
2014	3

Output #14

Output Measure

- Social marketing

Year	Actual
2014	0

Output #15

Output Measure

- Fact sheets, bulletins and newsletters

Year	Actual
2014	57

Output #16

Output Measure

- Video productions

Year	Actual
2014	4

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Develop, implement and evaluate new health and food safety training and resource materials for targeted audiences such as consumers, educators, food industry personnel and health care providers (# of new programs).
2	Commercial growers of fruit and vegetables, food industry producers, processors, and school personnel foodservice will participate in appropriately directed food safety (# people trained).
3	Increase understanding of motivators and barriers of making healthy food choices and the impact these food choices have on lipoprotein metabolism and metabolic syndrome in young adults.
4	Increase understanding and behavior change with regard to decreasing dietary intakes and increasing physical activity level, and the impact of these changes on body fat mass, physical function, and coronary heart disease risk factors in obese older women.
5	To develop and test laboratory techniques, free-living methodologies, and interventions to assess and improve within-meal eating behaviors, in the interest of healthy, effective body weight management and obesity prevention.
6	EFNEP and FSNE Families and Older Adults will improve dietary practices from baseline in one or more domains (diet quality, food security, food resource management, or food safety) thus reducing future risk of disease and improving health and quality of life.
7	Revise, as necessary, and implement food safety education for consumers, school educators, students and volunteers in Rhode Island and within the United States (#of people)
8	Assess and address individual and environmental factors that influence eating behavior of young adults.

Outcome #1

1. Outcome Measures

Develop, implement and evaluate new health and food safety training and resource materials for targeted audiences such as consumers, educators, food industry personnel and health care providers (# of new programs).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Health and food safety issues concerning a variety of foods keep evolving and information to target audiences requires continuous revision and updating. Therefore new training and resource materials need development/revision evaluation and implementation. In addition, new types of communication efforts are important to reach audiences.

What has been done

The food safety program website has been updated in areas such as Good Agricultural Practices (GAP), preservation, and emergency preparation. Farmer listserve updates are ongoing. A RI GAP certified listserve was created. A new curriculum targeting elementary/middle school students was created (with outside funding) focusing on food safety and school gardens. Food service directors were targeted as part of the farm to school initiative. Preservation workshops were revised to include a new demonstration workshop format, adding to our food preservation outreach initiative to meet growing demand from consumers for preservation of locally grown food.

Results

Two new programs were launched and numerous website additions/revisions were implemented. A third program will be implemented in FY 2015. Extramural funds have been also secured to help support the program.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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- 711 Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #2

1. Outcome Measures

Commercial growers of fruit and vegetables, food industry producers, processors, and school personnel foodservice will participate in appropriately directed food safety (# people trained).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	228

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is need for food safety information throughout the diverse RI community of foodservice workers, food industry personnel, processors and commercial fruit and vegetable growers. Federal and state regulations mandate specific training so that the RI food industry is in compliance. In addition, new federal regulations require outreach efforts to prepare processors for implementation. Participation in voluntary food safety programs is either becoming mandatory or an expectation for business and non-profits. This program has a regional impact for training.

What has been done

In collaboration with regional academic partners and RI state agencies, this program successfully offered or participated in 15 professional training sessions (e.g. workshops, conferences) that have been highly evaluated. Approximately 180 processors/farmers, in RI and across the region, have attended workshops related to seafood, meat/poultry, and produce, collaborating with University of CT. Over 1000 seafood processors are reached by a yearly newsletter. Two professional conferences have attracted over 140 people. All programs are routinely updated to reflect new information and mandates.

Results

All programs are evaluated for effectiveness on a 5 point Likert scale (1 to 5) for usefulness and/or understanding of key information. In addition, a farmer survey was implemented to assess the impact of the RI GAP program. All programs are rated above 4.0 (e.g. 5=very useful, extremely understood). Of the RI GAP certified farmers responding (N=15), 100% indicated that

the training and certification had a positive (N=12) or somewhat positive (N=3) impact on their business. Training resulted in: 52 GAP trained, 40 RI GAP certified farms, 34 Meat and Poultry HACCP trained, 90 Seafood HACCP trained, and 48 manager certified.

4. Associated Knowledge Areas

KA Code	Knowledge Area
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #3

1. Outcome Measures

Increase understanding of motivators and barriers of making healthy food choices and the impact these food choices have on lipoprotein metabolism and metabolic syndrome in young adults.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Young adults (those 18-24 years of age) are a population of interest, as identified by the National Institutes of Health and the American Heart Association in regards to risk for coronary heart disease. These organizations feel that there should be more of an emphasis on primordial intervention. Young adults are presenting with abnormal lipoprotein metabolism more frequently. This results in increased risk of metabolic syndrome and coronary heart disease. Because lifestyle choices, especially dietary intake, can impact this increased risk, we are using various types of messaging to improve dietary intake to reduce coronary heart disease risk.

What has been done

To address this problem, we analyzed data collected for the Nutrition and Food Sciences 210 Introductory to Nutrition lab. For the course, students complete a Cholestech screening (standard lipid profile and glucose concentrations via standardized fingerprick) in order to assess their heart disease risk. We have received IRB approval to use these data for research purposes. We have

approximately 250 participants with full lipid profiles.

Results

We found that low HDL-C and elevated triacylglycerols are the most common biochemical risk factors in this age group.

4. Associated Knowledge Areas

KA Code	Knowledge Area
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior

Outcome #4

1. Outcome Measures

Increase understanding and behavior change with regard to decreasing dietary intakes and increasing physical activity level, and the impact of these changes on body fat mass, physical function, and coronary heart disease risk factors in obese older women.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Saropenia, age related lean muscle loss becomes a major public health concern in older adults due to associated adverse health outcomes as well as increased health care costs. It can be problematic especially for obese older women. A healthy diet and appropriate exercise have the least amount of associated risk and can be used to prevent or slow progression of sarcopenia, thus providing a positive effect on health.

What has been done

During this report time period (10/1/13-9/30/14), we focused mainly on data analysis, manuscript writing and disseminating our previous research results through presentations at local community, and regional and national conferences, as our intervention phases are complete.

Results

The results from our recently completed study have shown participants in the behaviorally based diet education combined with exercise program (resistance & Tai Chi) not only became more physically active, but also improved their dietary quality and some measures of physical function.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #5

1. Outcome Measures

To develop and test laboratory techniques, free-living methodologies, and interventions to assess and improve within-meal eating behaviors, in the interest of healthy, effective body weight management and obesity prevention.

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

EFNEP and FSNE Families and Older Adults will improve dietary practices from baseline in one or more domains (diet quality, food security, food resource management, or food safety) thus reducing future risk of disease and improving health and quality of life.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

With one of the highest unemployment rates in the country and a persistent poverty level especially among families with children, there continues to be an increase in RI households that are food insecure. A high level of households continue to receive SNAP benefits and these participants tend to make less than healthful consumer choices when compared to higher income purchasers. Food insecurity persists among our large population of seniors, and this economic insecurity, shaped with unique nutrition needs and learning preferences, complicates nutrition related diseased states in which nutrition plays a vital role. At the same time, obesity rates continue to increase among children and adults alike, indicating a more than likely increase in new cases of type 2 diabetes, heart disease, stroke, hypertension, arthritis and obesity-related cancers. Ethnically, more than 40% of RI low-income children are Hispanic. Children living in areas of concentrated poverty, who are more likely Hispanic or Black, face challenges above and beyond the burdens of individual poverty. Hispanic children are more than twice as likely to be overweight or obese than non-Hispanic children. Obesity is associated with low education and income levels.

What has been done

SNAP-Ed and EFNEP efforts were focused on increasing fruit, vegetable, and whole grain consumption and a plant-based diet among adult and youth participants, as well as emphasizing food resource management. Reducing sugar-sweetened beverages and energy dense snacks as well as increasing fruit and vegetable consumption has been the focus of our first year of CYFAR programming. An effort to improve child feeding practices among parents and caregivers has also been emphasized with a program focus on making healthy choices easier, trying new foods, modeling healthy food behaviors, decreasing non-productive screen time, and increasing time spent in physical activity. In addition, we have taken a more collaborative approach and have actively pursued partners with similar client bases in order to deliver similar messages and strengthen programming, while working towards a systems and environmental change.

Results

A quasi-experimental study evaluated fruit and vegetable consumption among third and fourth graders in three Providence schools. Results found that in students receiving an eight week nutrition curriculum plus the Fresh Fruit and Vegetable Program (FFVP), fruit consumption increased by .89 pieces per day and vegetable consumption increased by .81 times per day ($P < 0.001$) when compared to a control school that received the FFVP but no nutrition curriculum and a control school that received neither program. No significant change was found in either control school. Healthy Servings for Seniors (HSS), a program partnership with Farm Fresh RI, found a significant increase in the amount of fruit and vegetable consumption and in the variety of fruit

consumed over a three month span by 96 senior participants. An increased consumption of one-half cup per day of fruit and one-half cup of vegetables was found. Day care providers (n=48) attended a two-part professional development series on infant feeding practices and division of responsibility. Post surveys given at six-weeks showed a 92% change in how and what foods were served. One hundred percent of day care providers shared program feeding information with parents. Ninety percent could better identify infant cues for hunger and fullness and 100% were able to practice the principles of division of responsibility at mealtimes. Eighty percent of EFNEP participants (n=353) improved in one or more nutrition practices (plan meals, make healthy food choices, prepare foods without adding salt, read nutrition labels). Twenty-nine percent of adult participants recorded a positive change in physical activity. Forty-two percent of EFNEP youth (n=1610) reported eating more vegetables on more days of the week.

4. Associated Knowledge Areas

KA Code	Knowledge Area
704	Nutrition and Hunger in the Population

Outcome #7

1. Outcome Measures

Revise, as necessary, and implement food safety education for consumers, school educators, students and volunteers in Rhode Island and within the United States (#of people)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	532

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The "local" food movement continues to foster a revival of interest in home food preservation. Issues related to quality and safety of local production and preservation should be addressed. School educators and volunteer workers continue to require professional development and food safety training, respectively.

What has been done

The preservation program was expanded by developing a new demonstration format and will complement the hands-on workshop and lecture-only formats. The new "on the road" workshop

will more easily offered to a larger state-wide audience and be more effective than lecture-style presentations. There have been two demonstrations and one hands-on workshop this year. Manager certification and online training oversight was offered to three groups and two volunteer food safety training sessions were completed. In addition, the food safety specialist oversaw a large fundraising event for a local daycare provider. She helped write and implement a food safety plan for the event.

Results

Most programs are evaluated for effectiveness on a 5 point Likert scale (1 to 5) for usefulness and /or understanding of key information. All programs are rated above 4.0, (e.g. 5=very useful, extremely understood). There were 62 participants in the food preservation workshops. There were 137 Master Gardener volunteers participating in the food safety and gardening outreach efforts. A community lecture series, jointly offered with RI Sea Grant reached 227 community members and students.

4. Associated Knowledge Areas

KA Code	Knowledge Area
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #8

1. Outcome Measures

Assess and address individual and environmental factors that influence eating behavior of young adults.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Eating a largely plant-based diet is widely acknowledged as being more healthful and more

environmentally sustainable. There is also a growing interest within the United States and especially among young adults in eating a diet containing foods that are locally grown and sustainably produced.

What has been done

We conducted a College Environment Behavioral and Perception Survey (CEBPS) to assess student behaviors and perceptions related to healthy eating. We also developed and tested a four-module Green Eating intervention to help students understand issues related to their personal environmental choices related to eating and to help them come to an awareness of how their own food choices affect the environment.

Results

The CEBPS has been completed by 404 students at URI and analysis of results is in progress. The Green Eating intervention was tested in 663 students. The experimental group improved environmentally conscious eating behavior, knowledge and attitudes more than the control group over the 6-week study period.

4. Associated Knowledge Areas

KA Code	Knowledge Area
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

All food safety programs were evaluated for effectiveness on a 5 point Likert scale for usefulness and/or understanding of key information. In addition, questions were asked about intent to use the information presented. (See descriptions embedded within outcome descriptions.)

Key Items of Evaluation

All food safety programs were rated above 4.0, with 1= not useful, not understanding to 5=very useful, extremely understood.