2014 University of Connecticut - Storrs Combined Research and Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

The 2014 Plan of Work called for six programs aimed at meeting the needs of citizens, communities, and businesses across the state. The six programs are: Food Systems, Land Use and Water, Nutrition and Wellness, Connecticut Green Industries, Youth Development and 4-H, and Families and Community Development. These six areas represent critical needs for research and extension programs identified by stakeholders from across the state. These six areas also align with the University's new Academic Plan that highlights research, scholarship, instruction, and engagement.

Connecticut is a state of extraordinary disparity. Some of the wealthiest communities in the United States are located in Connecticut. Less than one hour away, are cities and communities with some of the highest unemployment rates in the nation. The state is home to a strong and vibrant agricultural sector but also faces challenges to providing safe, reliable, healthy food supplies to many urban residents.

Research and Extension programs at the University of Connecticut's College of Agriculture, Health and Natural Resources (CAHNR) are committed to addressing these challenging disparities by investigating new areas relevant to agriculture, food, forestry, the environment, and human health. CAHNR is also the academic home for UConn Extension faculty and staff members who work to deliver science-based tools and technologies to help citizens, communities, and businesses prosper.

UConn Extension programs disseminated CAHNR's research results through more than two hundred seventy four formal outreach programs. A key component to Extension programs is the training of volunteers who became trainers themselves, leveraging the federal-state financial partnership in UConn Extension. There is no county government in Connecticut; the state is the only other source of support for local Extension programming and staffing. Our program efforts are far reaching, serving citizens through direct and indirect contacts via e-mail, webinars, websites that are managed/contributed by UConn Extension, fact sheets, consultations, public workshops, and training sessions.

The Storrs Agricultural Experiment Station manages the capacity research funding provided through the federal-state partnership and is responsible for facilitating CAHNR's research efforts. Competitive funds are obtained from a variety of federal and non-federal sources through the independent initiative of CANR's faculty and staff. We encourage fundamental and applied research, as well as multidisciplinary collaborations to gain knowledge and implement results to advance national goals established by the United States Department of Agriculture National Institute of Food and Agriculture (USDA NIFA).

Total Actual Amount of professional FTEs/SYs for this State

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	60.4	0.0	39.2	0.0
Actual	66.9	0.0	44.0	0.0

II. Merit Review Process

1. The Merit Review Process that was Employed for this year

- Combined External and Internal University External Non-University Panel
- Expert Peer Review

2. Brief Explanation

The College Advisory Group of stakeholders provided overall direction for research, education and Extension programs.

Peer review for Hatch, Hatch Multistate, McIntire-Stennis, and Animal Health Projects continues to ensure that quality research projects, consistent with identified priorities, are approved. Reviews involve the objective opinion of other scientists, and/or administrators within the University of Connecticut, and users of research results, when appropriate. Peer review ensures that every project receives a rigorous and systematic evaluation for appropriateness and quality. The process was conducted within the framework of predetermined criteria whose objective was to assess whether each Storrs AES research project (1) is guided by state, regional, and national priorities, (2) is of high scientific merit and quality, (3) incorporates a state-of-the-art scientific approach (4) is likely to successfully meet the goals of the project, and (5) whether it is completed and prepared according to the Storrs AES guidelines. The peer review process provided principal investigators with additional counsel on research direction and implementation. Department Heads participated in the peer review process by suggesting qualified reviewers. The Director of the Storrs AES/the Associate Dean distributed projects to qualified reviewers and approved edited projects once they were critically reviewed

III. Stakeholder Input

1. Actions taken to seek stakeholder input that encouraged their participation

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals

Brief explanation.

During 2014, CAHNR created an Extension Centennial Committee to consider the future of Extension programs in Connecticut at the time of the Centennial celebration of Extension in the United States. This group identified critical needs for programs. However, they also identified the need to expand efforts to market UConn Extension - and Extension programs - to ensure that programs reach the widest possible audience.

More broadly, the college-wide stakeholder input process continued to include considerations for both research and extension. Regular consultation with the College Advisory Board, farmers, producers, public and private agricultural agency service providers, and private agricultural-related businesses ensured a broad view of the needs in the state as well as emerging trends and concerns. Recommendations from the Governor's Council on Agricultural Development also were included in program development and implementation.

2(A). A brief statement of the process that was used by the recipient institution to identify individuals and groups stakeholders and to collect input from them

1. Method to identify individuals and groups

- Use Advisory Committees
- Use Internal Focus Groups
- Use External Focus Groups
- Open Listening Sessions
- Needs Assessments
- Use Surveys

Brief explanation.

Progress continues in soliciting and receiving increased stakeholder input. The State Extension Partner's Council meets at least twice a year and is comprised of representatives of County Extension Councils and other affiliated organizations such as 4-H camp boards, IFYE, and the Master Gardener Association. Greater rotation of participant representatives has been encouraged. Each Extension Partners group or organization is expected to conduct a general public needs assessment for statewide programming, involving Connecticut residents who are not members of the specific partners' group or organization. Periodic Dean's updates sent to all faculty and staff via e-mail/web, reports on his conversations with stakeholders and clientele. Use of on-line tools to solicit input from potential and current clientele and stakeholders continues to increase. The Dean's College Advisory Board addresses the broad needs of Connecticut in their meetings

2(B). A brief statement of the process that was used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Meeting with invited selected individuals from the general public

Brief explanation.

Traditional stakeholders such as vegetable producers and town officials provided input through end-of-session evaluations of programs with suggestions for improvements, as well as current and future needs. The CAHNR journal periodic newspaper available via e-mail/web page, highlighted research and extension efforts is available to the public, with comments solicited. The Sea Grant program collected input from aquaculture producers and town officials that directed change in programming focus and direction. Meetings with state boards such as the Food Policy Council and Farm Services Agency staff provided additional stakeholder input. The Farm Risk Management Advisory Group, comprised of more than 40 agriculture-related stakeholders from both traditional and non-traditional perspectives, provided input on a regular basis through facilitated discussions at meetings. Increased use of the Internet, both e-mail and the Web, is provided input from a wide range of current and potential clientele.

3. A statement of how the input will be considered

- To Identify Emerging Issues
- Redirect Extension Programs
- Redirect Research Programs
- In the Staff Hiring Process
- In the Action Plans
- To Set Priorities

Brief explanation.

Input was used to redesign programs, to initiate new programs, as the basis for grant proposals, and as a means for acquiring diverse perspectives when the College considers restructuring programs. The College developed a new Academic Plan in response to the University's Academic Plan. The CAHNR Academic Plan was shared with stakeholders to ensure that it met their needs and interests. College administration met regularly with stakeholders, the legislature and agency heads to both listen to and discuss stakeholder input

Brief Explanation of what you learned from your Stakeholders

Agricultural stakeholders continued to be concerned about federal agricultural programs that require significant paperwork, and programs that are not available in Connecticut. In addition, small scale Connecticut producers feel at a disadvantage.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
2214078	0	1288599	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	1689080	0	965014	0
Actual Matching	1689080	0	965014	0
Actual All Other	4234134	0	5278684	0
Total Actual Expended	7612294	0	7208712	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous				
Carryover	0	0	0	0

V. Planned Program Table of Content

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Food Systems

☑ 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
205	Plant Management Systems	5%		5%	
206	Basic Plant Biology	0%		10%	
212	Pathogens and Nematodes Affecting Plants	0%		5%	
215	Biological Control of Pests Affecting Plants	20%		5%	
216	Integrated Pest Management Systems	25%		10%	
307	Animal Management Systems	5%		5%	
311	Animal Diseases	15%		40%	
315	Animal Welfare/Well-Being and Protection	5%		10%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	15%		5%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	10%		5%	
	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	6.1	0.0	1.0	0.0
Actual Paid	5.4	0.0	0.8	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**
491939	0	330294	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
491939	0	330294	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
973384	0	1606060	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Food Systems program area focused on reducing food insecurity in the state of Connecticut. Research and Extension programs addressed food production, food safety, and the broader food system affecting access and distribution of food security. The food production component focused on specialty crops (fruits and vegetables), improving Best Management Practice (BMP) for producers and incorporating pest management strategies and improved business practices. The food safety effort included Good Agricultural Practices (GAP) training for crop producers, Hazardous Critical Control Points (HACCP) training for seafood producers and handlers, and safe practices for food storage for homeowners. The food systems work addressed improving access to fresh fruits and vegetables for low-income families and communities.

Activities included:

- on-line material such as fact sheets, impact statements and news articles
- food safety workshops and webinars
- YouTube videos, and mobile apps
- GAP and HACCP trainings, and individual counseling and assessments
- basic and applied research projects

2. Brief description of the target audience

Our target audience includes:
Consumers
Farmers/producers
Agency and organizations (staff) that serve or handle food at: camps; food pantries and soup kitchens; schools; day care centers, Head Start, senior centers, etc.
Food related businesses - processors, farmers' market masters and vendors, etc.
Seafood industry: seafood processors, dealers, harvesters, importers, and regulatory personnel.
Researchers, state, regional, national and internationally.
Policy makers

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	19799	204334	11378	3184

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

Patent Applications Submitted

Year:	2014
Actual:	1

Patents listed

1. A live attenuated anti-genically marked classical swine fever vaccine

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	4	47	51

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Conferences and Workshops, short courses, reports

Year	Actual
2014	181

Output #2

Output Measure

- New or updated web page(s)

Year	Actual
2014	5

Output #3

Output Measure

- Undergraduate and Graduate Students Supervised

Year	Actual
2014	463

Output #4

Output Measure

- Webinars conducted

Year	Actual
2014	5

Output #5

Output Measure

- YouTube videos produced

Year	Actual
2014	1

Output #6

Output Measure

- Apps developed

Year	Actual
2014	1

Output #7

Output Measure

- Clinical, extension or other expert services

Year	Actual
2014	298

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Reduce food insecurity in the state of Connecticut and across the northeast.
2	Develop food safety plans on farms
3	Develop non-antibiotic based control measures to prevent necrotic enteritis (NE) in turkeys and chickens.
4	Increase economic viability of agricultural producers

Outcome #1

1. Outcome Measures

Reduce food insecurity in the state of Connecticut and across the northeast.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	150

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
According to USDA, urban areas with concentrated poverty and minority populations are the critical factors in determining food deserts. In CT food deserts are mainly found in Fairfield County. Bridgeport and Danbury are two of the poorest cities in CT, with the two largest Hispanic populations, 32% and 24% respectively. 2010 US Census data show Hispanics represented almost 17% (155,000) of Fairfield County's population. The vast majority of Hispanics living in food desert areas are detached from agriculture; less than 1% (129 out of 155,000) of Hispanics get involved in the production of their food.

What has been done
UConn Extension's Urban Agriculture Program for Hispanic adults is in its second year. Outputs include:
1. Program participants completed 180 hours of classroom instruction covering: botany, vegetable production, entomology, crop risk management, and IPM.
2. Participants volunteered 1,603 hours working in the farm preparing the land, building raised garden beds, planting and transplanting, maintaining an acre of organic vegetables, and selling produce at the Danbury Farmer's Market and students were enrolled as certified food vendors.
3. Low-risk IPM tactics were applied throughout the production season including: use of resistant cultivars, cultural controls, physical controls, mechanical controls, biological controls.

Results
More than 4,000 pounds of locally produced organic vegetables were distributed among 150 low-income families at Danbury Farmer's Market. From April to October 2014 Urban Agriculture program participants produced a variety of vegetables and herbs including spinach, cilantro, dill, basil, carrots, beets, tomatoes, peppers, eggplants, zucchini, squash, radishes, and cabbage. All vegetables were produced applying organic production methods and IPM lower-risk tactics.

Eleven of 15 participants enrolled in the Urban Agriculture program completed the year round training. This group formed a nonprofit organization to continue promoting urban agriculture among Hispanics. Program participants increased their knowledge on each of the three modules tested (Botany, entomology, and vegetable production) and changed their behavior when producing vegetables by applying low-risk IPM tactics.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
206	Basic Plant Biology
212	Pathogens and Nematodes Affecting Plants
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems
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

Develop food safety plans on farms

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	24

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Recently several significant foodborne disease outbreaks were traced to produce packing houses. Since the Good Agricultural Practices (GAP) Audit Program and food safety plans are being required, there is a need to look at the food safety implications of the packing house environment; determine what types of practices need to be implemented to reduce the risk of contamination of produce in packing houses; and provide training and education opportunities for farmers who need to implement Good Manufacturing Practices and/or Good Handling Practices in

their facilities. In addition, the FDA Food Safety Modernization Act (FSMA) Produce Rule, will require farmers to implement a written preventative control plan for safe production and harvesting of fruits and vegetables.

What has been done
During year 2 of the Good Manufacturing Practices project we were able to further enumerate some of the microbiological testing results to develop a more complete picture of the presence of potential pathogens and other indicators in the packing house environments we explored. We created a picture survey of ten farms. An online survey was sent to 178 fruit and vegetable farmers via email. A workshop was organized and presented to 24 farmers in March of 2014. The workshop included: a review of food safety hazards associated with packing house processes and products, reviews of survey results and micro study, good manufacturing practices, sanitation standard operating procedures, allergen controls, and other areas related to food safety.

Results
Data collected via the email survey found that 78% of farms do not have a food safety plan. A model food safety plan was developed as a tool for farmers. As a result of this model safety plan, farmers will be better equipped to begin the task of conducting a food safety assessment of their packing house facility. In addition they will be positioned to improve their policies and practices, and to update or develop new food safety plans using the information and resources provided at the workshop.

Micro testing of 8 farms found:
- No E. coli O157:H7 was found
- Salmonella spp.(not enumerated for pathogenic species) were found in one farm on 4 surfaces including 2 floor drains, a cooler floor and fork lift tire
- Fecal coliforms were ubiquitous on almost every surface at every packing house, indicating the need for attention to sanitation by all
- Listeria spp. was present in all 8 packing houses: When enumerated, one pathogenic type, L.ivanovii, was found at all 8 farms. A variety of locations were involved, including sinks, drains, bins, conveyor rollers, cookers, floors, packaging, and counters.

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

Develop non-antibiotic based control measures to prevent necrotic enteritis (NE) in turkeys and chickens.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Necrotic enteritis (NE) is a serious disease affecting the small intestine of chickens and turkeys. Economic losses due to mortalities, reduced growth rate, medication costs and condemnations in the slaughterhouse can be considerable. In a severe flock outbreak,the mortality rate can be 50%. The disease has been reasonably well controlled for many years by the use of antibiotic growth promoters. However, use of these products is now banned in many countries, and their use is threatened in other countries, including in the U.S. Alternative strategies are needed to prevent the disease.

What has been done
A Hatch research project is studying NE in turkeys by developing a NE disease model. No disease model for NE currently exists for turkeys. The model will be used to understand the factors involved in development of the disease in turkeys, and also for future studies of intervention strategies, hopefully leading to non antibiotic based control measures to prevent the disease, which would remove concerns that consumers have about development of antibiotic resistance among human pathogens resulting from the feeding of antibiotics to animals.

Results
Attempts to produce the disease experimentally have been carried out, following the plan in the approved project proposal, but with additional variables (younger ages) introduced based on an unexpected but relevant finding during vaccination attempts in chickens. The experiments were designed and executed by the PI with assistance from a graduate student and undergraduate student workers. Some small mild gross lesions were detected in the intestine of a few birds but microscopic examination of the tissues is needed to determine if they are Clostridial induced lesions or not. Students gained experience in the management and manipulation of turkeys, and the design and execution of scientific research experiments. Histological evaluations need to be completed before final conclusions can be drawn.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

311	Animal Diseases
315	Animal Welfare/Well-Being and Protection
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources

Outcome #4

1. Outcome Measures

Increase economic viability of agricultural producers

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	9670

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Although the Food Quality Protection Act imposes stringent safety standards on pesticides used on food in the U.S. pesticide residues are still detected in fruits, vegetables, grains, meats and dairy products. Pesticides have many uses and we can be exposed to them through water and air as well as food. Because there is a trend toward home gardening, as well as buying local and organic foods, there is also an increased public resistance to pesticide use and a need for responsible pest management practices that minimize environmental effects.

What has been done
UConn's Integrated Pest Management (IPM)program integrates the application of multiple tactics through the selection of appropriate tools and education to the agricultural industry to provide sustainable, science-based approaches for the management of plant pests (insects, mites, diseases, wildlife, weeds). IPM Program team members conducted intensive on-site educational training for fruit and vegetable producers, and greenhouse growers. Growers received information on the current status and recommendations for important plant pests and training via pest messages, email alerts, webinars, newsletters, articles in national trade journals, websites, social media, consultations via phone, site visits to their operations, workshops and conferences. The use of IPM (including cultural controls, biological control agents, biological fungicides, physical and mechanical controls, the use of resistant cultivars, and behavioral modification) reduced plant losses due to plant pests.

Results

Broader adoption of IPM practices enhanced responsible pest management and reduced management and production costs; minimized adverse environmental and economic effects from pests; resulted in improved ecosystem quality and plant performance; and improved plant health, quality, yields, and aesthetics.
* 9,670 participants received IPM training and increased their knowledge and awareness of managing plant pests (insects, mites, diseases, wildlife, and weeds, including invasive plants), resulting in improved decision-making regarding management options.
* More than 41 New England vegetable growers have switched to Deep Zone Tillage (reduced tillage) to help maintain or improve crop yields with a changing climate that is warmer and wetter in the Northeast.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
206	Basic Plant Biology
212	Pathogens and Nematodes Affecting Plants
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems

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

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

• Urban agriculture participants were administered pre and post-tests for each of the classroom modules.
• Urban agriculture field activities (soil testing, IPM tactics, organic production methods, etc.) were evaluated through observations conducted by instructors and demonstrations made by participants.
• Urban agriculture participants kept logs of their field activities were they reported what they did in the field; from insect and disease identification to IPM tactics applied (planting, transplanting, scouting, weeding, watering, hand picking Japanese beetle, removing leaves with mildew, removing tomatoes with calcium deficiency, etc.).

- Packing house post workshop evaluations were completed the day of the program.
- IPM programs were evaluated by the following methods: pre- and/or post-program surveys, focus groups, key informant interviews, and testimonials.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Land Use and Water

☑ 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
102	Soil, Plant, Water, Nutrient Relationships	10%		10%	
103	Management of Saline and Sodic Soils and Salinity	0%		10%	
112	Watershed Protection and Management	25%		20%	
123	Management and Sustainability of Forest Resources	0%		10%	
124	Urban Forestry	5%		5%	
131	Alternative Uses of Land	5%		5%	
135	Aquatic and Terrestrial Wildlife	5%		5%	
136	Conservation of Biological Diversity	0%		5%	
205	Plant Management Systems	5%		5%	
216	Integrated Pest Management Systems	15%		15%	
605	Natural Resource and Environmental Economics	0%		5%	
608	Community Resource Planning and Development	15%		5%	
903	Communication, Education, and Information Delivery	15%		0%	
	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	1.6	0.0	0.2	0.0
Actual Paid	1.9	0.0	0.2	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**
176768	0	164222	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
176768	0	164222	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
801780	0	1412243	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Land Use and Water planned program addressed critical environmental priorities that contribute to improved air, soil and water quality; fish and wildlife management; enhanced aquatic and other ecosystems. Programs are strongly focused on the use of geospatial technologies to promote smart growth while conserving the natural resource base. Programs provided research-based training to municipal officials that incorporate geospatial technologies allowing them to better manage existing natural resources.
Activities included:
- on-line material such as fact sheets, impact statements and new articles
- workshops and webinars
- YouTube videos, and mobile apps.
- trainings and individual counseling and assessments
- basic and applied research projects

2. Brief description of the target audience

Elected municipal officials; municipal land use staff and commissioners, researcher, city/town volunteers and citizens; state environmental and agriculture agency staff.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	5100	19900	325	3149

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed
None

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	2	46	48

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Conferences and Workshops, short courses, reports

Year	Actual
2014	152

Output #2

Output Measure

- New or updated web page(s)

Year	Actual
2014	4

Output #3

Output Measure

- Training undergraduate and graduate students and Post Doctoral Researchers

Year	Actual
2014	206

Output #4

Output Measure

- Webinars conducted

Year	Actual
2014	9

Output #5

Output Measure

- YouTube videos produced

Year	Actual
2014	4

Output #6

Output Measure

- Apps developed

Year	Actual
2014	1

Output #7

Output Measure

- Clinical, extension or other expert services

Year	Actual
2014	97

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Improve sustainable development practices in Connecticut
2	Develop plans and educate municipalities on adaptive responses to the impacts of climate change; floods, coastal protection, emergency response preparedness, coastal storms.
3	Mitigate stormwater runoff damage

Outcome #1

1. Outcome Measures

Improve sustainable development practices in Connecticut

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	300

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In order for Connecticut communities, organizations, businesses and citizens to develop sustainable practices and protect natural resources, information on these resources must be made accessible and usable. In recognition of this fact, in 2010 UConn Extension and the CT Department of Energy and Environmental Protection (DEEP) partnered to create Connecticut Environmental Conditions Online, or CT ECO (http://cteco.uconn.edu.) CT ECO is an extensive internet mapping site, designed to be accessible to all visitors of the website, regardless of technical ability. Users can view and print maps from PDF files, use one of the several interactive online mapping applications, download data, or connect to spatial data from a desktop GIS program.

What has been done
In 2014 CT ECO;
-Created a statewide, high resolution elevation (Lidar-based) dataset including elevation, slope, aspect, hillshade and shaded relief;
-Worked with an external researcher to create carbon sequestration maps showing the impact of deforestation on carbon storage in the state's forests;
-Presented at one international conference, one regional conference, and four statewide conferences
-Developed a new training course and conducted four training sessions attended by over 95 CT DEEP employees;
-Incorporated CT ECO training into the curriculum of the Natural Resources Conservation Academy, a CAHNR program for high school students.
-Incorporated CT ECO training into two Climate Adaptation Academy workshops on the use of geospatial technology in storm readiness and response.
- Approximately 25,000 people visited the CT ECO site about 44,000 times.

- With an average visit duration of almost 3 minutes, 2013 usage was the equivalent to 255 work days spent using CT ECO by Connecticut communities, businesses, and individuals.
-Educated over 300 people on the development and capabilities of CT ECO.
-Conducted 2 CT ECO webinars reaching 266 people

Results
CT ECO brings the power of GIS technology and the flexibility of internet technology together to "democratize" access to natural resource information in Connecticut. Individuals, agencies, organizations, communities and businesses can, for the first time, access the latest and best statewide geospatial information with no more technical training beyond how to operate an internet browser. The project team has been recognized for creating this combination of information and usability, and was awarded the Public Service Award in 2012 from the CT Chapter of the American Planning Association.

The use of CT ECO just before Tropical Storm Irene demonstrates the power of this type of accessible information. On August 25, 2011, three days before Irene passed through Connecticut, CLEAR sent out a message to its municipal and agency mailing lists calling their attention to the Storm Surge Modeling maps available on CT ECO. In the days to come, CT ECO received about twice as many visits as normal (about 400 per day), until the storm knocked out power to many areas.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
205	Plant Management Systems
605	Natural Resource and Environmental Economics
608	Community Resource Planning and Development
903	Communication, Education, and Information Delivery

Outcome #2

1. Outcome Measures

Develop plans and educate municipalities on adaptive responses to the impacts of climate change; floods, coastal protection, emergency response preparedness, coastal storms.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	95

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
A number of severe storms in 2011 and 2012 caused significant economic and environmental harm to Connecticut municipalities, businesses and residences. After talking with local officials, residents, consultants and state officials, we discovered many complex and important climate related issues that will continue to challenge both coastal and inland communities over the next several decades.

What has been done
Extension Educators from Connecticut Sea Grant and the UConn Center for Land Use Education and Research (CLEAR) partnered with researchers, consultants and other professionals to work with municipalities on climate resiliency through a new Climate Adaptation Academy (CAA). CAA is designed to be a continuous process by which the complex and emerging climate adaptation issues facing municipalities are identified and innovative solutions are shared. CAA held 3 workshops, attended by 95 citizens, municipal officials, researchers, and outreach professionals.

Results
The first workshop provided a forum for an exchange of ideas and concerns about impacts of climate change and sea level rise on municipalities. A list of relevant topics to address in future CAA workshops was developed. In 2 additional workshops, State officials outlined the Connecticut Emergency Response and Long Term Recovery Program and explained how the state uses GIS to coordinate responses at the Emergency Operations Center. This led to a discussion of a communications gap between local and state emergency responders. Panels of municipal officials shared their experiences using technology to prepare for disasters, what worked and what obstacles they faced. This provided information and guidance for towns that need to build GIS capacity for emergency response.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
605	Natural Resource and Environmental Economics
608	Community Resource Planning and Development
903	Communication, Education, and Information Delivery

Outcome #3

1. Outcome Measures

Mitigate stormwater runoff damage

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	444000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
According to the EPA, stormwater runoff is the nation's leading source of water quality impairment. In urban areas like much of CT, runoff from extensive paved areas creates flooding and pollution problems. The challenge presented to UConn which mirrors many CT communities, is to protect local water resources while making use of new low impact development (LID) or green infrastructure (GI) practices. Quantifying the actual impact of these practices on local receiving waters is an important element for Clean Water Act regulatory compliance.

What has been done
UConn Extension's NEMO (Nonpoint Education for Municipal Officials) Program, in collaboration with UConn Facilities, installed over 25 new LID/GI stormwater practices on campus since 2009. A unique tracking system was created to quantify the reductions in stormwater runoff achieved using green infrastructure practices on campus. These efforts contributed to UConn receiving the Sierra Club's #1 greenest universities ranking in 2013-2014.

Results
The NEMO tracking system had an immediate policy and economic impact on the University. The tracking system documented progress in reducing stormwater runoff, which is a requirement of the CT Department of Energy and Environmental Protection, regarding UConn's compliance with regulatory programs. To date, approximately 444,000 square feet of impervious surface has been disconnected from the stormwater system. A new Memorandum of Understanding(MOU)replaced the previous MOU that would have required a costly diversion of stormwater from one local drainage basin to another adjacent basin; thus, the tracking system enabled UConn to save approximately $850,000. The MOU also serves to reinforce UConn's commitment to green infrastructure, which is prominently featured in the new Campus Master Plan written in 2014. A new group has been formed to plan and discuss GI options for future development on campus.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
131	Alternative Uses of Land
205	Plant Management Systems
608	Community Resource Planning and Development
903	Communication, Education, and Information Delivery

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

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

The CAA is the only statewide educational forum on climate adaptation in Connecticut. CAA held workshops focused on technology and emergency response, and raised awareness among state and local officials that procedures need to be developed to improve communications and coordination of emergency response efforts. In addition, the Town of Greenwich subsequently purchased a weTable to use for adaptation planning purposes. Evaluation forms were available at each workshop. These post-workshop surveys sought the participant's evaluation of the workshop content and feedback on how the workshops can be improved, and requested input on future workshop topics. Current plans are for all CAA participants receive a follow-up email survey six to eight months later. Workshop feedback and outreach efforts will help identify new CAA topics, and prioritize research and extension needs.

Key Items of Evaluation

Connecticut Environmental Conditions Online, or CT ECO's (http://cteco.uconn.edu) mission is to encourage, support and promote informed land use, conservation and development decisions in Connecticut by providing local, state and federal agencies, and the general public with convenient access to the most up-to-date and complete natural resource information available statewide. CT ECO is now entering its 6th year of existence.

- CT ECO usage, and return usage, is a measure of impact. The number of unique

individuals using CT ECO, and the number of total visits, has increased steadily. Of the almost 25,000 users in calendar year 2013, 46% were return users, and 54% new users.

- All Extension Geospatial Training Program training sessions include a participant survey and evaluation. For the CT DEEP trainings, 58 of the 97 participants responded. 100% said they would recommend the course to a colleague. 93% said they found the workshop either truly splendid or well worth it.
- In late 2012 CLEAR conducted a survey of Connecticut planners, agency staff, land use commissioners, and other clientele. There were 238 respondents representing 87 Connecticut towns, 10 other states, and 25 regional, state and federal organizations/agencies. In only its third year of existence, CT ECO was the CLEAR program with the greatest percentage of people reporting that they used it "regularly" or "all the time" (49%).

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Nutrition and Wellness

☑ 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%		25%	
702	Requirements and Function of Nutrients and Other Food Components	20%		25%	
703	Nutrition Education and Behavior	50%		25%	
724	Healthy Lifestyle	30%		25%	
	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	0.7	0.0	0.3	0.0
Actual Paid	0.4	0.0	0.5	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**
43772	0	228496	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
43772	0	228496	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
780620	0	1430455	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Nutrition and Wellness Planned Program conducted research and extension programs that focused on increasing knowledge about good eating and exercise habits to promote improved health and wellness.

Activities in this planned program included:

- Home visits, and individual and family consultations
- Demonstrations on healthy shopping and cooking
- Summer youth activities
- Workshops
- Webinars, websites, and other publications
- Basic and applied research studies

2. Brief description of the target audience

Limited resource families and youth; agency personnel, teachers, food service staff, camp personnel, Health personnel, researchers, policy makers, advocacy groups

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	2714	12109	1738	1827

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed

None

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	0	56	56

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Conferences and Workshops, short courses, reports

Year	Actual
2014	234

Output #2

Output Measure

- New or updated web page(s)

Year	Actual
2014	1

Output #3

Output Measure

- Training of undergraduate, graduate and post doctoral students

Year	Actual
2014	353

Output #4

Output Measure

- Webinars conducted

Year	Actual
2014	0

Output #5

Output Measure

- YouTube videos produced

Year	Actual
2014	2

Output #6

Output Measure

- Apps developed

Year	Actual
2014	0

Output #7

Output Measure

- Clinical, extension or other expert services

Year	Actual
2014	56

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increase program participants knowledge about healthy lifestyle changes to promote improved health and reduce obesity.
2	Enhance and improve nutrition education interventions to prevent childhood obesity of children beginning from conception to preschool age in low-income families.
3	Increase the health and well-being of program participants

Outcome #1

1. Outcome Measures

Increase program participants knowledge about healthy lifestyle changes to promote improved health and reduce obesity.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	13793

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Even in our relatively high income state, 12% of households experience food insecurity, 1/3 of children are overweight or obese (more than half are Hispanic and Black), an estimated one out of 5 residents eat no vegetables daily, 1/3 of our census tracts live more than a half mile from a healthier food retailer, and only 10% of our cropland is used to harvest fruit and vegetables. The typical elementary student receives just 3.4 hours of nutrition education each year. Efforts to strengthen education on healthy eating have a multifaceted approach in various Extension programs including FoodCorps, CT Youth Food Justice VISTA, 4-H, EFNEP, and partnerships with Nutritional Sciences and others.

What has been done
FoodCorps is a national service-learning program that places service members in high need school districts to build school gardens, teach nutrition, and bring local food products into the cafeteria. Our 15 service members collaborate frequently with Extension programs and their networks to address food system change across the state and regionally. FoodCorps service sites are in food insecure towns and cities across the state. Food service environments are improved via school gardens, nutrition education and farm to school. FoodCorps works in collaboration with our other Extension sustainable food programs: the Connecticut 10% Campaign, CT Food Justice Youth Corps VISTA project, and the 4-H program.

FoodCorps service members have built 26 gardens with our partners. 424 adult volunteers in FoodCorps have new leadership skills working with youth to improve food environments. 7,255 educational activities were conducted throughout the state. 324 pounds of produce were donated from the FoodCorps gardens to soup kitchens and other local organizations.

Results
Our service members work alongside teachers to increase the quantity of nutrition education children receive, while dramatically improving its quality through an emphasis on hands-on

learning. FoodCorps addresses childhood obesity, increases knowledge about healthy lifestyle changes, and strengthens youth, families and communities. FoodCorps service members reported that 13,793 students have improved knowledge of healthy, nutritious eating through the programs and activities that were conducted.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #2

1. Outcome Measures

Enhance and improve nutrition education interventions to prevent childhood obesity of children beginning from conception to preschool age in low-income families.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Obesity is the number one nutritional problem in America. Prevention in early life is one of the most powerful strategies for combating the current obesity epidemic. It is evident that current childhood obesity prevention interventions are ineffective during time periods from preconception through early childhood (ages 2-5 years old). Parents, including fathers, have a strong influence over a child's eating and physical activity habits. Key behaviors have been identified to prevent childhood obesity, yet, effective nutrition education interventions for families within the community are lacking. Furthermore, a disproportionate risk for childhood obesity exists among lower income and/or minority families.

What has been done

A Hatch research project is in progress to 1) inventory and analyze the current nutrition education obesity prevention resources available to low-income families from time points of preconception to preschool; 2) assess low-income families' barriers to implementing recommended obesity prevention behaviors and determine corresponding nutrition education needs; 3) develop and pilot test new nutrition education resources for childhood obesity prevention and; 4) evaluate the impact of new nutrition education resources on obesity related

health and nutrition parameters for low-income families in a community-based, longitudinal study from preconception through early childhood.

This past year, several types of data were collected and presented at national conferences including additional formative/cross sectional data of interviews with low-income fathers of preschool age children to determine relationships of diet quality, body mass index and physical activity. In addition, qualitative interviews were conducted with low-income mothers to determine barriers to consuming fruit, vegetables and whole grain foods. Also, data analysis was conducted and presented as it relates to parenting and feeding styles and child obesity.

Results

Results of research efforts this past year have provided evidence of the following: 1) children as young as 3 years old can distinguish between healthy and unhealthy snacks and therefore can be taught to make healthier food choices, 2) fathers' weight status, diet quality and vigorous physical activity level as well as feeding practices are associated with preschool age children's weight status, diet quality, vigorous physical activity and eating behaviors thereby indicating that fathers, in addition to mothers, should be targeted in obesity prevention outreach and, 3) mothers continue to identify barriers including knowledge and skills to implementing Dietary Guidance messages particularly related to vegetable and whole grain intake thereby indicating the need to reevaluate current consumer nutrition education messages and outreach efforts.

These research findings will help enhance and lead to innovative behavioral-based nutrition education interventions to prevent childhood obesity which may translate to reduced prevalence of adult obesity and associated chronic disease.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #3

1. Outcome Measures

Increase the health and well-being of program participants

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	649

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

More children across the United States are suffering from overweight and obesity. Thirty percent of American children are overweight, 15% are obese, and millions more are at risk. Children from low-income households are at greatest risk for developing obesity given the high calorie, but poor quality diets and limited opportunities for physical activity. In Connecticut 10% of students are obese, 14% do not participate in moderate or vigorous physical activity in a week, and 30% of high school students watch TV for 3 or more hours on an average school day. Poor diet quality and lack of physical activity over a lifetime place adults at greater risk for a multitude of chronic diseases such as cancer, hypertension, cardiovascular disease, and diabetes. Minority and low-income adults are disproportionately at risk for developing chronic diseases due to these lifestyle factors as well as limited access to preventive care.

What has been done

Preventive nutrition and wellness programs conducted by Extension faculty and staff in Connecticut are reaching targeted groups of limited resource families and youth to raise awareness and promote positive behavior changes in diet quality, physical activity and access to preventive care services. Programs are conducted as single workshops or series of lessons to assist these groups in basic nutrition, physical activity and health. Programs are reaching adults and youth in urban, suburban and rural communities throughout the State; bilingual programs are also conducted for Spanish speaking groups. UConn websites for EFNEP, CT FANS IM, and Sustainable Living also provide nutrition and physical activity information on- line to the general public. Extension nutrition educators are also contacted by the public on a regular basis regarding nutrition, food safety, and food preservation topics.

Results

At-risk youth targeted through CT Fitness and Nutrition Clubs in Motion (CT FANS IM) and urban 4-H programs have shown increased awareness and knowledge of nutrition and physical activity. Youth have documented positive behaviors such as improved snacking choices and increased physical activity during the week. Youth involved with gardening projects showed increased knowledge of nutrition and increased vegetable consumption. Youth participating in Tools for Healthy Living project are able to identify home risks to health such as smoking, mold, and food bacteria. Specifically, Connecticut Fitness and Nutrition Clubs In Motion (CT FANs IM), is a 4-H Afterschool program designed to reduce obesity rates in children ages 9 to 14, through sustainable interventions surrounding food and fitness, reached 649 students this reporting period. The program is a collaboration between the UConn Extension, and the Department of Kinesiology. CT FANs IM, was modeled after the original 4-H FANs Fitness and Nutrition Clubs, a USDA Children, Youth and Families at Risk (CYFAR) Program.

4. Associated Knowledge Areas

KA Code	Knowledge Area
701	Nutrient Composition of Food

702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior
724	Healthy Lifestyle

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.)
- Other (Lack of access to a supermarket)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

We use a nationally recognized survey instrument (the Fruit & Vegetable Neophobia Scale) to measure change of attitude among students working with FoodCorps CT Service Members. Changes in schools: Through the FoodCorps Landscape Assessment, we measure changes happening across each of our participating schools that help make them healthier places to learn, work, and play. Since schools are where kids spend the majority of their day, it's critical that the surrounding environment supports them in making healthy decisions and developing healthy habits. In the last year, 66% of our schools made better use of their gardens. Another 60% made improvements to their cafeteria environments to promote healthy eating.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Connecticut Green Industries

☑ 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
102	Soil, Plant, Water, Nutrient Relationships	5%		5%	
111	Conservation and Efficient Use of Water	5%		0%	
112	Watershed Protection and Management	5%		5%	
131	Alternative Uses of Land	10%		0%	
132	Weather and Climate	5%		0%	
135	Aquatic and Terrestrial Wildlife	5%		0%	
136	Conservation of Biological Diversity	0%		5%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		10%	
202	Plant Genetic Resources	0%		10%	
205	Plant Management Systems	20%		10%	
206	Basic Plant Biology	0%		10%	
216	Integrated Pest Management Systems	25%		25%	
601	Economics of Agricultural Production and Farm Management	10%		5%	
605	Natural Resource and Environmental Economics	5%		10%	
607	Consumer Economics	5%		5%	
	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	3.7	0.0	0.5	0.0
Actual Paid	4.1	0.0	0.7	0.0
Actual Volunteer	1325.0	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**
365988	0	242002	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
365988	0	242002	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
841745	0	817821	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The green industry planned program focused on developing new tools and technologies that promote safe and healthy green spaces across Connecticut. Research and extension programs focused on Integrated Pest Management (IPM) approaches for schools and other municipal areas. Programs also addressed tools and techniques for groundskeepers to improve management of recreational areas. Activities included: .

- on-line material such as fact sheets, impact statements and news articles
- workshops and webinars
- YouTube videos, and mobile apps.
- trainings and individual counseling and assessments
- basic and applied research projects

2. Brief description of the target audience

Consumers, agricultural businesses, community agencies and organizations, greenhouse, nursery and landscape businesses.

3. How was eXtension used?

UConn Extension's Home and Garden Education Center is the Northeast Regional First Responder to eXtension 'Ask the Expert' questions, 176 questions from the National eXtension 'Ask the Expert' were routed and answered by the Center this past year.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	16310	673949	629	40

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

Patent Applications Submitted

Year:	2014
Actual:	3

Patents listed
1. Butterfly bush variety - "Summer Skies"
2. Apparatus, System and Method for Mechanical, Selective Weed Control in Mature and Establishing Turfgrass Strands.
3. Methods to produce animal browsing resistant plants.

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	5	29	34

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Conferences, workshops, short courses, and reports.

Year	Actual
2014	214

Output #2

Output Measure

- New or updated web page(s)

Year	Actual
2014	4

Output #3

Output Measure

- Number of undergraduate and graduate students and Post Doctoral Researchers trained

Year	Actual
2014	150

Output #4

Output Measure

- Webinars conducted

Year	Actual
2014	7

Output #5

Output Measure

- YouTube videos produced

Year	Actual
2014	0

Output #6

Output Measure

- Apps developed

Year	Actual
2014	1

Output #7

Output Measure

- Clinical, extension or other expert services

Year	Actual
2014	456

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Partcipants in attendance at green industry planned program activities adopting best management practices.
2	Increase awareness of sustainable practices that benefit the local and regional economy.
3	Improve urban and community horticulture
4	Enhance adaptive capacity of proper soil nutrient management

Outcome #1

1. Outcome Measures

Partcipants in attendance at green industry planned program activities adopting best management practices.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	4000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Greenhouse and nursery products (ornamental shrubs, flowers, young plants) are Connecticut's leading source of agricultural income. Approximately 300 commercial greenhouse businesses have 8 million square feet of production space under cover. In addition, many Connecticut farmers have added greenhouse crops to their businesses to increase income. This audience needs education on proper pesticide management, alternative controls, enhancing and conserving environmental quality and improving profitability.

What has been done

Integrated Pest Management (IPM) integrates the application of multiple tactics in a variety of settings through the selection of appropriate tools and the education of members of CT industry and citizens to provide sustainable, science-based approaches for the management of plant pests (insects, mites, diseases, wildlife, and weeds, including invasive plants). Program objectives include maintaining the economic viability of agricultural and green industry businesses, enhancing and conserving environmental quality and natural resources, educating participants on the effective use of biological control agents, and educating pesticide users about the safe use and handling of pesticide products.

IPM Program team members conducted intensive on-site educational training for garden center owners, greenhouse growers, nursery producers and retailers, and turf and landscape professionals. Growers and green industry professionals received information on the current status and recommendations for important plant pests and training via pest messages, email alerts, webinars, newsletters, articles in national trade journals, websites, social media, consultations via phone, site visits to their operations, workshops and conferences.

Results

Broader adoption of IPM practices enhanced responsible pest management and reduced management and production costs; minimized adverse environmental and economic effects from pests; resulted in improved ecosystem quality and plant performance; and improved plant health, quality, yields, and aesthetics.
* Approximately 1,285 pesticide applicators and occupational users were provided with training on the safe use and handling of pesticide products, including those who earned pesticide recertification credits. Approximately 4,000 non-certified people received pesticide safety training.
* 38 growers and landscape professionals adopted IPM practices and acquired relevant information on and increased awareness of existing and emerging pests to improve production, crop quality, profitability, and aesthetics.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
131	Alternative Uses of Land
136	Conservation of Biological Diversity
205	Plant Management Systems
216	Integrated Pest Management Systems
605	Natural Resource and Environmental Economics
607	Consumer Economics

Outcome #2

1. Outcome Measures

Increase awareness of sustainable practices that benefit the local and regional economy.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Green Industry within the U.S. provides critical economic activity associated with not only the sale of nursery and greenhouse projects, but also via the impact the value chain and services associated with the industry. As such, Connecticut and the Northeast, has a tremendous opportunity to service a large population, thereby creating a direct impact on the local and regional economy.

What has been done
Through a better understanding of the value chain, a Hatch Multistate research project is addressing specific issues affecting the Green Industry in order to create efficiencies within the movement of goods, enhance the competitiveness of domestic product, or to facilitate better decision making via more information for policy makers and industry. A study examined the role labeling perceptions (local, sustainable, organic and eco-friendly) drive consumers purchase decisions.

Results
Analysis of surveys and economic experiments that address the issue of perceptions and preference for labeling, show that consumers are confused about the definitions of many labels (e.g. local, sustainable, organic, eco-friendly), but these labels do drive the purchase decision for many consumers. Over 100 industry professionals in CT attended a workshop presentation on the influences of labeling and gained new knowledge about the impact labeling has on consumer purchasing decisions. Many indicated they will improve their labeling practices in order to decrease consumer confusion about labeling terms.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
607	Consumer Economics

Outcome #3

1. Outcome Measures

Improve urban and community horticulture

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual

2014 21000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Most American citizens are more than two generations removed from the farm. There is a strong public support to protect and enhance the natural, historical and developed environment. With the proper education, actions taken at the individual level can have positive environmental and community consequences. The Master Gardener Program is designed to address these sorts of actions as well as provide CT citizens with timely, effective and accurate responses to their home and garden queries. The program emphasizes urban and community horticulture, and historical and sustainable landscapes.

What has been done

The following activities were conducted in the Master Gardener Program:
* Conducted a nine-month training program for 180 citizens
* Conducted 92 one-time Master Gardener classes on consumer horticultural topics for the public
* Provided expert advice through office hours/telephone/internet and a hotline for consumer gardening questions and concerns
* Conducted Garden talks to library, garden and other community groups
* Provided volunteer support for community and other production gardens
* Provided outreach to gardeners at area fairs and other public events
* Provided volunteer support and teaching projects with other community gardening projects, historical gardens and school gardens

Results

Results from the Master Gardener Program include:
* 171 people completed Master Gardener training
* 100,700 contacts with members of the public via, telephone, mail and walk-ins resulted in the diagnosis of a wide variety of plant cultural, insect and disease problems.
* 2082 people attended 92 Garden Master Classes as part of the Advanced Master Gardener Program. These classes are offered to the public as well as Master Gardeners.
* Master Gardeners Interns volunteered over 5,600 hours at the County Extension offices and the Bartlett Arboretum and volunteered over 5,900 hours in community outreach projects providing education and assistance to CT gardeners
* Certified Master Gardeners volunteered over 21,000 hours in the community and at County Extension offices.
* Participants in classes report they intend to change an assortment of gardening practices as a result of material presented

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
205	Plant Management Systems
206	Basic Plant Biology

Outcome #4

1. Outcome Measures

Enhance adaptive capacity of proper soil nutrient management

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	12196

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The Soil Nutrient Analysis Laboratory addresses several environmental and health issues by conducting analysis of soil and tissue samples from commercial and residential individuals throughout Connecticut. Legislation governing the application of phosphorus to established lawns was enacted in January, 2013. Phosphorus is the largest contribution to pollution of Connecticut's fresh water systems. Soil analysis can provide agricultural producers and residential consumers guidance on environmentally sound fertilizer recommendations to protect water systems and provide cost savings through best management practices. Additionally, on average 19% of home vegetable gardens are found to have elevated soil lead levels. It is essential to educate home gardeners about the risks of lead poisoning and mitigation strategies.

What has been done
A total of 12,196 soil and tissue samples were analyzed from July 1, 2013 to June 30, 2014. Standard soil fertility tests were performed on 8,263 soils for home grounds recommendations, 1,802 soils for commercial growers and 260 research soil samples. The lab also ran 1293 miscellaneous analyses for pH, mechanical analysis, organic matter and soluble salts, 644 pre-side dress soil nitrate tests (PSNT), 223 cornstalk nitrate analyses, and 852 plant tissues. The laboratory is working towards implementation of a new soil test recommendation program which was developed in conjunction with the University of Massachusetts' and University of Vermont's laboratory.

Results
In FY 2014, 12,196 soil tests provided individuals with knowledge on how to apply the proper quantities of limestone and fertilizer and how to do so in an environmentally sound manner. If fertilizers are applied as directed,the result should be reduced contamination of water sources. Since April of 2007, all soils receiving the standard nutrient analysis are screened for lead. In

2104, 263 clients with elevated levels of soil lead received fact sheets that address lead health concerns and discuss soil remediation techniques. More Connecticut residents learned about the benefits of soil testing and proper soil nutrient management through the Laboratory's website, www.soiltest.uconn.edu and a recently created Facebook page. Increased social media presence improved the laboratory's visibility and made it easier for the public to find information of soil testing. In addition, Soil Nutrient Analysis Laboratory performed analysis on 1,159 soil and plant tissue samples from UConn's Plant Science and Landscape Architecture Department, saving the Department approximately $14,000 in analytical expenses.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
205	Plant Management Systems
206	Basic Plant Biology

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
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

1. Outcome measure: Increase awareness of sustainable practices that benefit the local and regional economy. Hatch Multistate project results were presented to a wide variety of academic and industry professionals. With respect to industry professionals, over 100 industry professionals in CT alone attended one of the workshops/presentations. Based on survey feedback from attendees at the sessions, a majority of participants indicated they were now more aware of how their labeling impacts decision making, and many indicated they would increase labeling and highlight what their firm means by better defining their use of label terms of local, sustainable, organic, or eco-friendly. However, the research impact goes beyond the industry as results were also picked up by Time.com and the Huffington Post as well as being published in Today's Garden Center and Greenhouse Grower magazines.
2. IPM programs were evaluated by the following methods: pre- and/or post-program

surveys, focus groups, key informant interviews, and testimonials.
3. Master Gardener program participants take pre- and post-tests to gauge knowledge. Post-class evaluations collected for all individual classes and for the Master Gardener Program as a whole. Advanced Master Gardener class members participate in post- class evaluations

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Youth Development and 4-H

☑ 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
205	Plant Management Systems	10%		0%	
307	Animal Management Systems	10%		0%	
315	Animal Welfare/Well-Being and Protection	10%		0%	
703	Nutrition Education and Behavior	10%		0%	
724	Healthy Lifestyle	20%		25%	
801	Individual and Family Resource Management	10%		25%	
802	Human Development and Family Well-Being	10%		25%	
806	Youth Development	20%		25%	
	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	5.4	0.0	0.2	0.0
Actual Paid	6.3	0.0	0.0	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**
479666	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
479666	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
272952	0	12105	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Youth Development and 4-H planned program area focused on creating safe, healthy, well-educated children and teens through 4-H Clubs, afterschool programs and interactive learning experiences. Efforts also focused on incorporating Science, Technology, Engineering and Math (STEM) curriculum into youth development programs and activities.

Activities included:

- workshops and webinars
- YouTube videos, and mobile apps
- volunteer training programs
- on-line material such as fact sheets, impact statements and news
- developed research-based curricula
- after-school programs
- youth employment programs
- camps and 4-H Fairs

2. Brief description of the target audience

Youth, their families, school personnel, youth-serving agencies and organizations; community organizations and agencies. Volunteers involved with youth and adults.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	11798	148221	31495	116671

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

Patent Applications Submitted

Year: 2014

Actual: 0

Patents listed

None

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	1	2	3

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- After-school programs [sites] conducted or organized.

Year	Actual
2014	112

Output #2

Output Measure

- Conferences, workshops, short course, and reports

Year	Actual
2014	15

Output #3

Output Measure

- Undergraduate and Graduate Student Supervised

Year	Actual
2014	35

Output #4

Output Measure

- Webinars conducted

Year	Actual
2014	0

Output #5

Output Measure

- YouTube videos produced

Year	Actual
2014	2

Output #6

Output Measure

- Apps developed

Year	Actual
2014	0

Output #7

Output Measure

- New or updated web sites

Year	Actual
2014	0

Output #8

Output Measure

- Clinical, extension or other expert services

Year	Actual
2014	228

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of youth indicating increased knowledge or skills in one or more of the nine 4-H program emphasis areas
2	Youth making a positive impact in their communities through volunteering.
3	Increase in the health and well-being of youth participating in program activities

Outcome #1

1. Outcome Measures

Number of youth indicating increased knowledge or skills in one or more of the nine 4-H program emphasis areas

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	20000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Unsolved worldwide social problems need to be addressed by science. In the US, there is shortage of scientists & people understanding science, an under-representation of women and minorities in science careers and a need for a diverse pool of trained scientists to frame and solve problems & educate others. The success and future of our nation depends on the youth of today. Nationally, the 4-H Youth Development program focuses on three core mission mandates: 1) science, engineering and technology; 2) healthy living; and 3) citizenship.

What has been done
Over 20,000 youth participated in CT 4-H youth development programs. Of this number, 2583 were involved in organized club programs, 3020 participated in camping programs and 14,397 in short-term or special interest programs with an increased focus on science and technology. Youth STEM activities included:
4-H BRIDGES/ASPIRE; 4-H FIRST Robotics; 4-H National Youth Science Day Experiment; Connecticut 4-H Adventures in STEM; County 4-H Fair Programs; County 4-H Science Clubs; County 4-H Science Days; Environmental Science Day; In-school, after-school and out of STEM enrichment programs; State 4-H Animal Programs; State 4-H Citizenship Day- "How to communicate in a Technical World" and State Shooting Sports Club.

Results
Youth developed increased awareness of how science impacts their daily lives: in learning about gardening, for example, they learn methods to increase yield and how technology impacts modern farming. Youth learned new vocabulary and literacy in scientific methods through 4-H activities. Youth learned through the Animals programs the anatomy and physiology of animals. An example is how the ruminant's digestion system differs from that of the monogastric. The

hands-on activities inherent in 4-H engages the youth and they become excited to learn more and continue to engage in other 4-H activities. Youth bring what they learned home, educating family members and increasing the science literacy in the general population.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
802	Human Development and Family Well-Being
806	Youth Development

Outcome #2

1. Outcome Measures

Youth making a positive impact in their communities through volunteering.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	2195

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The success and future of our nation depends on the youth of today. Nationally, the 4-H Youth Development program focuses on three core mission mandates: 1) science, engineering and technology; 2) healthy living; and 3) citizenship. These three mission mandates align with the research and programming efforts of USDA, the National Institute of Food and Agriculture and the land grant universities and colleges.

The mission of the CT 4-H Youth Development program is to help youth to make good decisions, develop leadership and citizenship skills while improving self-confidence. All youth need support and positive experiences to grow to their fullest capacity and to become productive adult citizens.

What has been done

Eighty-five percent of enrolled 4-H members, 2195, were involved in service learning/community service activities. This represents an estimated 70,000 volunteer hours provided by 4-H youth/adult partnerships. Activities included food drives, camp/public space clean-up and maintenance days, holiday baskets/caroling, mitten/hat drives, Locks for Love/Wigs for Kids,

educational outreach, collecting school items, filling backpacks for military children, gifts for senior centers and animal shelters. While some are strictly community service in focus, many go further as service learning opportunities through youth involvement in decision making, planning, and completion and follow-up of projects.

Results
Based on the value of volunteer hours provided by the Independent Sector estimate of $26.43 per hour for Connecticut, the hours volunteered by CT 4-H youth and adult volunteers has an estimated worth of $1,850,100.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
806	Youth Development

Outcome #3

1. Outcome Measures

Increase in the health and well-being of youth participating in program activities

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	3462

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Studies have proven that deployment and reintegration are emotionally difficult for military youth and their families, and they need extra support from community organizations in order to be resilient. There are 10,159 military kids ages 0 to 18 in Connecticut, and just under half are not affiliated with an active duty military base. Instead they are geographically dispersed and live in every town in Connecticut.

What has been done
Operation: Military Kids (OMK) is a national effort to support children of service members before, during, and after deployment. Connecticut OMK educated the community on the specific needs of military families, youth, and children through workshops and briefings. CT OMK conducted formal and non-formal activities and/or loans technology equipment for military youth events. They also provided referrals to state or community organizations that can provide additional support to military youth and families.

Results
* 3,462 Connecticut military children and youth utilized community resources and engaged with peers at military youth events resulting in increased resilience.
* 4,065 adults increased their awareness of the specific needs of military youth and learned of community resources available to military youth and families.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being
806	Youth Development

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 Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Families and Community Development

☑ 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
602	Business Management, Finance, and Taxation	20%		0%	
607	Consumer Economics	20%		0%	
801	Individual and Family Resource Management	20%		0%	
802	Human Development and Family Well-Being	20%		50%	
903	Communication, Education, and Information Delivery	20%		50%	
	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	2.4	0.0	0.2	0.0
Actual Paid	1.3	0.0	0.0	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**
130947	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
130947	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
563653	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Families and Community Development planned program focused on providing Connecticut citizens a link to University of Connecticut specialist and current research priority areas identified by our stakeholders. Programs were also focused on improving conditions for families and communities through leadership development, community planning and technology training.
Activities included:.

- workshops and webinars
- YouTube videos, and mobile apps
- volunteer training programs
- on-line material such as fact sheets, impact statements and news
- Develop research-based curricula

2. Brief description of the target audience

Parents, youth, children, teachers, elected officials and policy makers.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	10530	84301	3703	21456

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed
None

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total

Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Conferences, workshop, short courses, and reports

Year	Actual
2014	8

Output #2

Output Measure

- New or updated websites

Year	Actual
2014	2

Output #3

Output Measure

- Undergraduate and graduate students supervised

Year	Actual
2014	0

Output #4

Output Measure

- Webinars conducted

Year	Actual
2014	0

Output #5

Output Measure

- YouTube videos produces

Year	Actual
2014	0

Output #6

Output Measure

- Apps developed

Year	Actual
2014	1

Output #7

Output Measure

- Clinical, extension or other expert services

Year	Actual
2014	34

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of program participants indicating increased leadership, parenting or finacial management skills.
2	Increase in the health and well-being of individual, families, and communities participating in Family and Community Development Programs.
3	Increase consumers' knowledge about environmentally sustainable lawn care and gardening activities.

Outcome #1

1. Outcome Measures

Number of program participants indicating increased leadership, parenting or finacial management skills.

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Increase in the health and well-being of individual, families, and communities participating in Family and Community Development Programs.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	368

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

According to research conducted by the Harvard Family Research Project parental involvement in education is related to a range of benefits for students including: improved school readiness, higher student achievement, better social skills and behavior, and increased likelihood of high school graduation. In addition, they found that parental beliefs, attitudes, values, and childrearing practices, as well as home-school communication, are linked to student success. Schools alone cannot meet students' needs so relationships among families, schools, and communities in support of learning is critical.

What has been done

Educating parents in basic life skills and community engagement increases their ability to become civically engaged in their schools, their communities and the broader democracy in which they live. Engaging parents in a process that empowers them to use skills they already have and to learn new leadership skills provides a dynamic process which results in increasing the participation of parents, particularly parents in low income families. UConn Extension's People Empowering People (PEP) program provided 368 parents leadership training. Facilitators provided training sessions on the following topics: values, verbal and non-verbal communication skills, active listening, problem solving, understanding the helping role, understanding ourselves

and others as parents, understanding our children, our community and its leaders, action planning, and community opportunity. In addition in 2014, three Extension programs supporting parent leadership training (UConn PEP, PLTI and Parent SEE) with funding from the CT Parent Trust Fund coordinated a statewide conference on Parent Leadership.

Results

PEP participants conducted a variety of community projects including organizing town wide events, conducting family literacy projects, developing a resource booklet for parents, developing a children's library at a housing project, and collecting funds for children's playscape. Generally participants commit four to eight months to the program. During this reporting period, 368 PEP participants received leadership, parenting, and other skill training.

Over 200 parent leaders and facilitators from across the state attended the one day conference. This professional development effort was the first of its kind for CT in that the parental leadership training programs joined together to provide a free and informative educational opportunity to parent leaders based on their input and suggestions.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation
607	Consumer Economics
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
903	Communication, Education, and Information Delivery

Outcome #3

1. Outcome Measures

Increase consumers' knowledge about environmentally sustainable lawn care and gardening activities.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	630

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

According to a National Gardening Survey, 3 out of 4 U.S. households participate in one or more lawn or gardening activities. The 2012 census (http://quickfacts.census.gov/qfd/states/09000.html) reports a Connecticut population of over 3.5 million people. This would mean that more than 2.5 million Connecticut residents may engage in some form of gardening or lawn care. In addition, the 2013 Garden Writers Association Research Report indicates that more than half of gardening households grew vegetables during the past year. This trend is likely to increase as food costs rise and consumers look for safe and healthy food. With these activities comes a need for environmentally sustainable information and educational programs in best management practices for pest control, soil and water quality, plant cultural techniques, mitigation of climate change, GAP and food production for increased self-

What has been done

The Home and Garden Education Center runs a fee-based diagnostic laboratory. The lab is fully equipped for identification and diagnosis of plant and pest problems for both homeowners and commercial clientele. In 2014 approximately 630 samples were processed. The lab maintains a USDA Plant Protection and Quarantine permit which allows them to receive out of state samples as well as samples of select regulatory agents. The staff participated in NPDN training to recognize and handle exotic, invasive insects and diseases. In addition, Home & Garden Education Center staff conducted outreach activities on recognition and response to pest outbreaks, including exotic and invasive pests and on diagnosis and management of plant pest and disease problems with a focus on Integrated Pest Management (IPM). Activities included: 26 Master Gardener training sessions, 33 lectures, 78 newspaper articles, 41 newsletter articles, 51 weekly blogs, and 2 factsheets.

Results

The lab and Home & Garden Education Center combined identified or diagnosed approximately 630 samples during fiscal year 2014,an increase of 40% over 2013. This increase is due in part to the new Plant Diagnostic Sample Submission App, introduced in 2013 for iOS devices. The UConn Plant Diagnostic Lab participated with eight other land grant universities to develop the app in an effort led by Purdue University. With an accurate plant diagnosis or pest ID, gardeners, farmers, professional growers and landscape professionals can respond rapidly and effectively to manage problems with a minimum of chemical pesticide use.

169 Master Gardener students were given First Detector Training. This training is intended to teach students how to respond in the event of a preliminary identification of pests of regulatory concern in the county offices. An example of a regulatory pest is the Asian longhorned beetle, a destructive insect pest that is not known to be in Connecticut but is present close to our borders. Rapid identification and response to this pest is critical to minimize environmental impact. The training includes identifying this and other high risk pests, maintaining a secure chain of custody of the sample and proper packaging and shipping of samples. After completing the training, students are eligible to become Certified First Detectors and become part of a national registry that receives a newsletter and email pest alerts.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
903	Communication, Education, and Information Delivery

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

At the Parent Leadership Conference, participants evaluated each workshop session as well as the overall conference. All a scale of 1 (not at all) and 4 (extremely) participants ranked the relevancy of the presentations as 3.3 or higher. The most common complaint was the need for more time in the workshops.

Key Items of Evaluation

VI. National Outcomes and Indicators

1. NIFA Selected Outcomes and Indicators

Childhood Obesity (Outcome 1, Indicator 1.c)	
14397	Number of children and youth who reported eating more of healthy foods.
Climate Change (Outcome 1, Indicator 4)	
0	Number of new crop varieties, animal breeds, and genotypes whit climate adaptive traits.
Global Food Security and Hunger (Outcome 1, Indicator 4.a)	
0	Number of participants adopting best practices and technologies resulting in increased yield, reduced inputs, increased efficiency, increased economic return, and/or conservation of resources.
Global Food Security and Hunger (Outcome 2, Indicator 1)	
0	Number of new or improved innovations developed for food enterprises.
Food Safety (Outcome 1, Indicator 1)	
0	Number of viable technologies developed or modified for the detection and
Sustainable Energy (Outcome 3, Indicator 2)	
0	Number of farmers who adopted a dedicated bioenergy crop
Sustainable Energy (Outcome 3, Indicator 4)	
0	Tons of feedstocks delivered.