



**November 13-14, 2018  
The American Hotel  
a DoubleTree by Hilton  
160 Ted Turner Dr. NW, Atlanta, GA**

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Welcome to the Southern Region Integrated Produce Safety Conference. Over the next two days we will discuss ongoing efforts and best practices in the delivery of FSMA related training, education and technical assistance within the southern US. Our partners from industry, trade organizations, non-profit organizations, universities, and government agencies will share efforts and discuss challenges affecting FSMA outreach. As a key component of the conference, Food Safety Outreach Projects (FSOP) funded by USDA NIFA in the southern region will be featured. We have compiled this book of abstracts to aid in the sharing of FSOP information. The projects will be introduced in a lightening round on Wednesday and we hope you will take the time to interact with the authors during the poster session immediately following the lightening round. Many of the featured projects exemplify best practices for meeting the training needs of the owners and operators of small and medium-sized farms, beginning farmers, socially disadvantaged farmers, small food processors, and small fruit and vegetables merchant wholesalers.



Kristin Woods, PhD  
Southeast Regional Extension Associate  
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# **2018 Southern Regional Integrated Produce Safety Conference Planning Committee**

Sydney Stone Armstrong - FDACS  
Denise Beuttenmuller - FDA  
Maggie Hart Brown - GDA  
Travis Chapin – UF IFAS  
Michelle Danyluk – UF IFAS  
Richard De Los Santos - TDA  
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# Southern Region Integrated Produce Safety Conference

November 13-14, 2018

## Tuesday, November 13

Time	Session	Presenter(s)
8:00 AM	Farm Tours (optional)	
<b>12:00 PM</b>	<b><i>Lunch on your own</i></b>	
1:00 PM	Welcome and Introduction	Michelle Danyluk, UF (FL) Maggie Brown, GDA (GA) Francisco Diaz, UGA (GA)

### Moderator: Fatemeh Malekian, Southern University (LA)

1:30 PM	<b>Updates from State Departments of Agriculture</b> <ul style="list-style-type: none"><li>• Innovative ways regulatory agencies are reaching farmers</li><li>• What to consider when developing an inspectional approach</li><li>• Perspective of a new CAP recipient</li><li>• Working across state lines and MOUs</li><li>• Panel Discussion</li></ul>	Richard De Los Santos, TDA (TX) Richard De Los Santos, TDA (TX) Carrie Porterfield, FDACS (FL) Brent Burchett, KDA (KY) Maggie Brown, GDA (GA) All
2:30 PM	<b>NASDA Update</b>	Bob Ehart, NASDA

Tuesday, November 13 (continued)

Time	Session	Presenter(s)
3:15 PM	Break	
3:30 PM	<b>Reaching Small Farms</b> <ul style="list-style-type: none"><li>Local Food Safety Collaborative national survey results and plans for addressing needs</li><li>Building relationships and trust with growers</li><li>Creating consensus, commitment, and aculture of food safety</li><li>A tiered approach to reaching growers with diverse levels of food safety awareness</li></ul>	Sydney Armstrong, FDACS (FL) Chelsea Matzen, NFU (DC)  Marty Mesh (FL)  Will Gray, Wallace Center (VA)  Elena Rogers, NCSU (NC)
5:00 PM	<b>Considerations for Tribal Nations</b>	Erin Parker, IFIA (AR) Toni Stanger-McLaughlin, IFAI (AR)
5:30 PM	<b>Produce Safety Alliance Update</b>	Kristin Woods, PSA (AL)
6:00 PM	<i>Dinner on your own, optional Ponce City Market visit</i>	



**Ponce City Market**  
675 Ponce De Leon Ave NE  
Atlanta, GA 30308  
Open until 9 pm



Ponce City Market breathes new life into the historic Sears, Roebuck & Co. building in Atlanta. The classic structure, which is the area's largest adaptive reuse project, has been reinvented as a vibrant community hub. The market infuses vigor and excitement into this historically-significant structure, located in one of Atlanta's most cherished neighborhoods.

In 2014, Ponce City Market began to reopen the fully renovated Sears, Roebuck & Company building, restoring its prominence as a vital landmark in Atlanta's burgeoning Old Fourth Ward. Linked directly to the Atlanta BeltLine, and situated across from Historic Fourth Ward Park, our iconic stretch of Ponce de Leon Avenue is a major part of the redevelopment movement at the crossroads of Atlanta's most established neighborhoods.

At the heart of Ponce City Market is the marketplace itself, a flexible space to gather, eat and shop. Similar to the legendary food hall at Chelsea Market in Manhattan, the Central Food Hall is a culinary gathering place within a revamped historic space, but with the distinct character and flavors of Atlanta. Artisan chefs and local purveyors fill an authentic market with the design, food, and flavors of Atlanta. From morning coffee to lunchtime shopping and date-night dinners, the Central Food Hall is a daily gathering place and culinary destination, year-round.

Retail shops and offices add to the life, color, and culture of Ponce City Market and surrounding neighborhoods. Residents of the Flats apartments in the upper floors of the east and west wings are just a few steps or an elevator ride from workplaces, shopping, the Central Food Hall, and direct access to the BeltLine. Atlanta neighborhoods of Virginia-Highland, Poncey-Highland, and Midtown are all within easy walking or pedaling distance.

## Wednesday, November 14

<b>Time</b>	<b>Session</b>	<b>Presenter(s)</b>
<b><u>Moderator: Justin McConaghy, ODAFF (OK)</u></b>		
8:00 AM	<b>FDA Produce Safety Network Update</b>	Trevor Gilbert, FDA PSN-CFSAN Diane Ducharme, FDA PSN-CFSAN Socrates Trujillo, FDA PSN-CFSAN Nicole Clausen, FDA PSN-ORA Karen Killinger, FDA CFSAN
<b>10:00 AM</b>	<b><i>Break</i></b>	
10:30 AM	<b>Food Safety Outreach Projects and Regional Centers Lightning Round</b>	Kristin Woods, PSA (AL)
	<ul style="list-style-type: none"> <li>• NECAFS &amp; NECAFS Clearinghouse</li> <li>• North Central Regional Center</li> <li>• Western Regional Center</li> <li>• Southern Center</li> <li>• A Multistate Effort to Integrate and Expand Farmers' Market Food Safety Materials Across the Southern Region</li> </ul>	Elizabeth Newbold, UV (VT) Angela Shaw, ISU (IA) Jovana Kovacevic, OSU (OR) Michelle Danyluk, UF (FL) Renee Boyer, VT (VA)

## Wednesday, November 14 (continued)

Time	Session	Presenter(s)
10:30 AM (continued)	<ul style="list-style-type: none"> <li>• Revision and Expansion of the Florida “Build Your Own Farm Food Safety Manual” AND</li> <li>• Fruits, Vegetables, and FSMA Compliance: Multilingual Audiovisual Food Safety Training for Farms and Packinghouses</li> <li>• Bridging the Gap: Effective Risk Management Through Adoption of Agricultural Water Treatment Systems</li> <li>• Packing Sheds, Field Intrusions, and Arkansas Produce Safety Updates</li> <li>• Mobile Produce and Practicing Food Safety Project.</li> <li>• Empowering small on-farm and limited-resource processors with custom FSMA training AND</li> <li>• Local Produce Safety Initiative</li> <li>• Food Safety and Outreach Program for Small and Socially Disadvantaged Farmers</li> </ul>	<p>Travis Chapin, UF (FL)</p> <p>Annette Wszelaki, UT (TN)</p> <p>Amanda Perez, UofA Extension (AR)</p> <p>Voulynnne Small, BEST (NC)</p> <p>Roland McReynolds, CFSA (NC/SC)</p> <p>Barrett Vaughan, TU (AL)</p>

## Tuesday November 14 (continued)

Time	Session	Presenter(s)
10:30 AM (continued)	<ul style="list-style-type: none"> <li>Environmental Assessment to Customize food safety training for very small to small producers in the southeastern US</li> <li>Produce Food Safety Training for Military Veterans</li> <li>Develop hands-on training to evaluate and reduce microbial food safety risk associated with agricultural water.</li> <li>NC Department of Agriculture Outreach Programs</li> </ul>	Thomas Yeargin, UofA (AR)  Rebecca Brightwell, UGA (GA)  Achyut Adhikari, LSU (LA)  Chris Harris, NCDACS (NC)

**12:00 PM**    *Poster Session*

**12:30 PM**    *Networking Lunch*

**Moderator: Billy Mitchell, NFU (GA)**

**1:30 PM    On-Farm Readiness Review Update**

- |   |                              |
|---|------------------------------|
| • Introduction  | Rachel McEgan, UF (FL)       |
| • OFRR – The Georgia Perspective                          | Maggie Brown, GDA (GA)       |
| • Florida OFRRs – 8 months of helping our farmers succeed | Sydney Armstrong, FDACS (FL) |
| • Questions   | All                          |

**2:30 AM**    *Break*

**Tuesday November 14 (continued)**

<b>Time</b>	<b>Session</b>	<b>Presenter(s)</b>
2:45 PM	Best Practices for Evaluation Success	Lendel Narine, UF (FL) Amy Harder, UF (FL)
3:30 PM	Wrap up, next steps	Renée Goodrich Schneider, UF (FL)
<b>4:00 PM</b>	<b><i>Adjourn</i></b>	



# ABSTRACTS





## **Develop and Deliver Hands-On Training To Evaluate And Reduce Microbial Food Safety Risk Associated With Agriculture Water**

**Adhikari, Achyut**; Fontenot, Kathryn; Cater, Melissa; Malekian, Fatemeh

The Food Safety Modernization Act (FSMA) Produce Safety Rule (PSR) requires that all agricultural water must be safe and of adequate sanitary quality for its intended use. Several methods are currently available for water treatment such as chlorination, chlorine dioxide, ozone, filtration and UV treatments. However, not all the methods are suitable for on-farm surface water treatment due to their complexity and variability in effectiveness. Fruit and vegetable producers using surface water to irrigate crops are required to have appropriate water treatments in place that do not leave any chemical residue. The overall goal of this project is to reduce the food safety risk associated with the surface water source in Louisiana. The LSU AgCenter has developed and validated several on-farm water treatment methods using chlorine dioxide, ultraviolet-C light and zeolite water filtration system. To achieve our goal, we will use the results from our on-farm studies to develop hands-on training, tools and resources for fresh produce growers that rely on surface water for irrigation. The specific objectives are: 1) Develop and deliver a one-day agriculture water safety curriculum integrated with hands-on training 2) Evaluate the impact of education and training programs. The LSU AgCenter and Southern University extension programs will work in collaboration with the Southern Center, Produce Safety Alliance (PSA), Louisiana department of agriculture and forestry, local food hubs, non-governmental organizations, other community-based organizations to carry out the training programs consistent with FSMA Produce Safety Rule requirements.

# Fruits, Vegetables, and FSMA Compliance: Multilingual Audiovisual Food Safety Training for Farms and Packinghouses

**Bihn, Elizabeth**; Suslow, Trevor; Chapin, Travis

The Food Safety Modernization Act (FSMA) Produce Safety Rule (PSR) establishes science-based minimum standards for safe growing, harvesting, packing, and holding of produce on farms. New standards were introduced for worker training, and health and hygiene. These establish qualification and training requirements for all personnel who handle covered produce or food-contact surfaces and their supervisors, require documentation of required training, and establish hygienic practices and other measures needed to prevent persons from contaminating produce with microorganisms of public health significance. Produce growers and packinghouse owners subject to the rule will need to comply with the FSMA PSR and meet worker-training requirements. A multimedia training approach is an effective way to reach farm and packinghouse workers with multicultural backgrounds. Visual communication of information is extremely useful for knowledge retention for workers and helps to overcome challenges related to low literacy. In addition, translations allow workers to experience training in a language they understand with appropriate verbal emphasis. The video format ensures standardized training in locales where access to qualified food safety training may be inaccessible or unaffordable for farm workers and their supervisors. The purpose of this project is to develop a multilingual (English, Spanish, Hmong, Haitian Creole) food safety educational video training program for farm and packinghouse workers that will incorporate new PSR requirements. This project builds upon an existing farm worker food safety video training (*Fruits, Vegetables, and Food Safety: Health and Hygiene on the Farm*) developed by the National Good Agricultural Practices (GAPs) Program personnel at Cornell University in 2004 with more than 85,000 copies in circulation. Completion of this project will result in the development of effective multilingual educational video materials that increase farm worker understanding and implementation of proper hygiene practices will reduce food safety risks for the fruits and vegetables they harvest and pack.

# **Produce Food Safety Training for Military Veterans**

## **Brightwell, Rebecca**

Veterans have been increasingly entering into agricultural careers. Understanding food safety is a critical component of operating a farm. Many of the Veterans entering into agriculture also have a disability diagnosis as a direct result of their service. Due to the prevalence of service related injuries and mental health impairments, researchers have suggested the need to both understand and accommodate Veterans in learning environments.

The project builds on a pilot funded by USDA/NIFA. During the pilot an existing food safety curriculum was adapted for a Veteran audience to address military culture and accommodate for the most common disabilities Veterans experience. The project expands the work to a larger geographical Veteran audience. The University of Georgia (Lead) and Texas A&M will train over 120 Veterans. In addition, the lead project will produce a train-the-trainer guide. The ultimate outcome is for Veterans to have increased knowledge and long-term retention of food safety practices including FSMA, water testing and sampling and developing food safety plans.

- Aim 1: Adapt food safety curricula to be reflective of military culture
- Aim 2: Train Project Staff on food safety curricula and delivery
- Aim 3: Teach Veterans on food safety including FSMA utilizing curricula adapted under Pilot
- Aim 4: Provide on-going TA to Veterans on food safety during life of project
- Aim 5: Develop Train-the-Trainer Materials
- Aim 6: Publicize and distribute materials
- Aim 7: Educate Extension agents on curricula and availability.
- Aim 8: Evaluate if trainings and materials were effective

## **Revision and Expansion of the Florida “Build Your Own Farm Food Safety Manual” Program**

**Chapin, Travis**; Hochmuth, Bob; Treadwell, Danielle; Galindo-Gonzalez, Sebastian; Krug, Matt; Henry, Mary Beth; Danyluk, Michelle

Extension collaborators in Florida have been offering a “Build Your Own Farm Food Safety Manual” workshop since 2010 to assist small and beginning farmers develop food safety plans to improve food safety practices and expand market access through meeting third-party audit standards. In 2011, the Food Safety Modernization Act (FSMA) was signed into law which gave FDA new authority to regulate on-farm produce safety. These training materials were updated upon the initial passage of FSMA but well before the proposed Produce Safety Rule (PSR) was released and they have not undergone significant revisions since 2011. Due to the continued demand for the Florida “Build Your Own Farm Food Safety Manual” workshops along with the impending implementation of the PSR, there is a clear need to revise the now outdated curriculum to aid in the development of FSMA-compliant food safety documentation and practices. Previous workshop participants have also indicated a need for more hands-on scenarios and examples. The objectives of this project are to (1) revise the existing workshop materials and develop two training demonstration sites, (2) deliver the revised training to expanded audiences, and (3) develop evaluation tools and assess short- and medium-term learning and impact. Participants will develop an improved understanding of foundational food safety principles and practices that support the production of safe food, as well as FSMA compliance, through the visualization of key food safety issues discovered through hands-on, problem-based exercises at a demonstration farm and packinghouse and they will be equipped with the framework of a personalized farm food safety plan to organize records required by the PSR and meet buyer requirements

## **A Southern Training, Education, Extension, Outreach, and Technical Assistance Center to Enhance Produce Safety**

**Danyluk, Michelle**; Goodrich-Schneider, Renée; Harder, Amy; Schneider, Keith; Treadwell, Danielle; Jackson-Davis, Armitra; Gibson, Kristen; Fouladkhah, Aliyar; Harrison, Mark; Harrison, Judy; Hurst, Bill; Mohan, Anand; Newman, Melissa; Rentfrow, Paul; Vijaykumar, Paul; Woods, Tim; Adhikari, Achyut; Fontenot, Katheryn; Silva, Juan; Kim, Taejo; Chapman, Benjamin; Gutierrez-Rodriguez, Eduardo; Ducharme, Diane; Green, David; Jaykus, Lee-Ann; Gunter, Chris; Levine, Jay; Stevenson, Clint; Jaroni, Divya; Jadeja, Ravi; Ma, Li; McGlynn, William; Feliciano Orellana, Lynette; Plaza, Maria; Northcutt, Julie; Critzer, Faith; Wszelaki, Annette; Taylor, Matt; Acuff, Gary; Anciso, Juan; Castillo, Alejandro; Strawn, Laura; Boyer, Renee; Vallotton, Amber; Williams, Robert; Sarjeant, Keawin; Valesco, Mario; Mesh, Marty; McReynolds, Roland

The overall goal of the Southern Center (SC) was to build a collaborative infrastructure in the Southern US to support Food Safety Modernization Act (FSMA) compliant training, education, extension, outreach, and technical assistance as it relates to the produce industry. The SC includes participation from land-grant institutions, community-based and non-governmental organizations (NGO/COBs) in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, Puerto Rico, South Carolina, Tennessee, Texas, and Virginia. Objectives include: (1) Develop a cadre of PSA and FSPCA certified trainers within the Southern US; (2) Develop and deliver region and stakeholder specific education; (3) Create strong partnerships with representative NGO/COBs to build capacity; and (4) Evaluate the impact of SC education, training and technical assistance programs. Train-the-trainer courses were held across the southern states; more than one Lead Trainer/Lead Instructor, and four trainers/instructors, in each state/territory were developed. Development and publication of add-on curricula, including model-teaching plans for the Preventive Controls rule, are ongoing. The major barriers to FSMA adoption by participants of training programs in the SC were determined through a causal-comparative study (n=795) via a structured questionnaire. Perceived cost of compliance, and participants' current knowledge were major barriers. Pre/post-tests to measure knowledge gain have been developed, validated, and are in use for PSA and FSPCA PCQI courses. A directional dependent samples t-test was used to determine that there has been a significant increase in knowledge after completion of PSA (n=921)

and FSPCA (n=163) training. A qualitative evaluation was conducted with participants three months after they attended SC training. Most respondents were using the information to write food safety plans and manuals for their organization, fine-tuning existing plans, implement safety plans, consult with clients on compliance laws and work with manufacturers to become compliant, assist colleagues with understanding the requirements, and share information with growers.

## **NC Department of Agriculture Outreach Programs**

### **Harris, Chris**

Members of the North Carolina Fresh Produce Task Force collaborated with the NCDA-CS Soil & Water Conservation Division to expand the relationship between produce safety and conservation. Existing Soil & Water Cost Share Programs and AgWRAPs (Agriculture Water Resources Assistance Programs) were identified as having a dual purpose for a participating farmer working towards conservation and produce safety. These Cost Share Programs follow the NRCS (Natural Resource Conservation Service) and USDA guidelines. This outreach and collaboration with NCDA-CS Soil & Water Conservation has given agents the ability to identify and discuss environmental issues on a farm that might have PSR influence. Agents can promote a corrective action which not only have a soil or water conservation component but a PSR incentive. The goal was to bring further awareness to the PSR and sources available for Soil & Water Conservation agents helping farms.

## Western Regional Center to Enhance Food Safety

Kovacevic, J.; Stone, D.; DeWitt, C.; McGorin, R.

Located at Oregon State University, the Western Regional Center to Enhance Food Safety (WRCEFS) is one of four U.S. regional centers that were created in 2015 to coordinate food safety training programs relevant to the Food Safety Modernization Act (FSMA). The primary goal of the WRCEFS was to build a regional infrastructure to support the delivery of FSMA-compliant training, education, outreach and technical assistance to food industry stakeholders in the Western U.S. To accommodate a wide variety of agricultural systems, WRCEFS is sub-divided into four sub-regions to account for total agricultural production and similarity of crop production systems. WRCEFS encompasses 13 states and two Pacific territories, representing more than half of the land mass of the U.S. and over 50% of the specialty crop market value. Sub-regions are coordinated through four Land-Grant universities (University of California at Davis, Washington State University, New Mexico State University, and the University of Hawaii), while also utilizing partnerships with a network of NGOs in California and Washington. During 2015-2018 funding period, WRCEFS activities largely focused on the development of lead trainers (204 FSPCA, 66 PSA) in the Western Region to deliver certified Food Safety Preventive Controls Alliance (FSPCA) and Produce Safety Alliance (PSA) training workshops. Supplemental teaching materials were also identified and developed to reflect region-specific agricultural production and processing system needs including: introduction to FSMA and basic food safety education for small food processors; improvements to grower tools supporting the agriculture water rule; sanitation basics; food safety education for cottage industry in Hawaii; and creation of a digital repository of produce food safety photos for trainers. In the next three years, WRCEFS will continue to support FSMA trainers in the Western Region, while also working closely with other regional centers to promote food safety education, training, extension, outreach, and technical assistance in compliance with FSMA.



# **Empowering Small On-Farm and Limited-Resource Processors With Custom FSMA Training**

**McReynolds, Roland**, Esq.; Tripp, Patricia; Gutierrez-Rodriguez, Eduardo

## **Background**

Manufacturers of low-risk activity/food combinations are not required to complete Food Safety Preventive Controls Alliance training. However, they need training on FSMA's Current Good Manufacturing Processes (cGMP), which are applicable to all facilities, regardless of their product offerings and exemption status under the Preventive Controls Rule. Training needs to be cost-effective and culturally-appropriate while addressing the needs of under-served, small-scale producers working in organic and sustainable local foods systems.

**PROJECT TIME PERIOD:** Sept. 2016 to Aug. 2018

## **Objective**

Develop a food safety training and outreach program customized to the needs of small-scale, diversified farm mixed-type facilities and entrepreneurs producing FDA identified low-risk, value-added foods for local and regional markets.

## **Methods**

- Develop an online training tool specific to cGMP requirements.
- Develop a one-day hands-on cGMP course for small and very small facilities.
- Two phase pilot delivery of the online tool and in-person training.
- 

## **Accomplishments**

- Developed a mandatory online Good Manufacturing Distant Education (DE) Module and evaluation tools.
- Developed add-on DE modules including preserves, blanching, dehydrating, and freezing process specific subject matter.
- Developed guidance documents for registering and completing the online DE Modules.

## **Northeast Center to Advance Food Safety (NECAFS) Clearinghouse**

### **Newbold, Elizabeth**

The Northeast Center to Advance Food Safety Clearinghouse is a curated source of Produce Safety Rule (PSR) and Preventive Controls for Human Food Rule (PCHFR) related resources under the Food Safety Modernization Act (FSMA). These resources, e.g. published rules, national curricula, fact sheets, webinars, add-on and supplemental educational materials, videos, coverage assessment tools, and calculators have been developed and continue to be developed by many different partners in research, education, outreach, and regulatory roles. Given this breadth of work, it can be challenging to learn about all the resources that exist and then to know what partner website to visit to find that material. This Clearinghouse is intended to collect and curate these materials on one single site. Using the search function, the user can find specific material and then follow links directly to the source of that information. The goal of this site is to provide direct links to food safety people, projects, and publications through a verified process so that regulators, educators, technical service providers, growers and processors can feel confident knowing that the information they find within the clearinghouse is a trusted source of food safety related information. This is done but allowing only those with approved accounts to submit resources to the clearinghouse. An additional step of resource review and community rating will be added in the future.

## **Packing Sheds, Field Intrusions, and Arkansas Produce Safety Updates**

### **Philyaw Perez, Amanda**

National efforts are underway to educate growers on the FDA FSMA Produce Safety Rule aimed at helping them understand good agricultural practices and federal regulations that apply to their farm. Most state's designated their Cooperative Extension Specialists to lead the outreach and education efforts for growers. Arkansas Extension Specialists continue to host the Produce Safety Alliance (PSA) Grower Training, but are now expanding their capacity by training county extension educators and offering additional hands-on produce safety workshops. This presentation will provide Arkansas Extension's progress in educating farmers and technical assistance providers on produce safety.

Arkansas Extension Specialists partnered to host two, two-day workshops. The first workshop covered the Produce Safety Rule and Wildlife Management with County Agents. County agents learned about the federal regulations that now impact the produce industry and offered them training and tools for field demonstrations to limit animal intrusion. A training was held with farmers on the Produce Safety Rule and Postharvest Handling. Farmers had requested additional training on packing sheds and post-harvest handling best practices such as record keeping, cleaning and sanitation, cooling, washing, packing, etc. These two-day training sessions served as a pilot study in the effectiveness of providing a second day of demonstrations and skills development for produce safety training participants. This pilot provides support for the utility of conducting similar training workshops with Arkansas county agents and produce growers.

## Food Safety Outreach Projects and Regional Centers: North Central Regional Center

### Shaw, Angela

In February of 2016, the North Central Regional Center for FSMA Training, Extension, and Technical Assistance (NCR FSMA) was established by the FDA to represent the 12 states (Iowa, Illinois, Indiana, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Ohio, and Wisconsin) in the Midwest region of the United States. The North Central Regional Center's specific aims are to: a) Establish a sustainable communication network connecting educators and grower/processors throughout the NCR to facilitate collaboration for FSMA compliance preparation and build training capacity; b) Conduct a regional needs assessment and identify the gaps in knowledge for growers and processors and necessary educational tools or technical assistance for educators; c) Develop and implement a food safety program that addresses the needs of small-scale growers, processors and educators, and provides region-specific technical and FSMA rule assistance in the NCR; and d) Use continuous evaluation of the impact of food safety training and technical assistance offered by the NCR FSMA as feedback to improve training and other services. To date, we have completed a north central regional needs assessment and have developed 27 add-on materials based on the educational needs provided in the assessment. Specifically, we have developed the following add-on materials: Farm Stand and U-Pick Produce Operations Safety Best Practices; FSMA Produce Rule Summary for Midwest Orchards; Value Added Products Fact Sheets: Fermented Foods; Jams and Jellies; and Pickled Vegetables (3 separate documents); FSMA Compliant On-Farm Thermophilic Composting; Daily Pre-Harvest Checklist; FSMA Produce Safety Rule: Dealing with Wildlife; Checklist for Preventive Controls Human Food and Good Manufacturing; Practical Record Keeping (Envelope); Bodily Fluid Clean Up on the Farm; Interactive quizzes for those who make Value Added Products (12 state specific); GAP training videos in Hmong (with English subtitles) (3 videos); and Checklist for Retail Purchasing for Local Fresh Produce. Additional add-on materials will be available by February 2018. These include: FSMA Produce Safety Rule: Dealing with Domesticated Animals; Value Added Products Fact Sheets- Frozen and Dehydrated Foods; On-Farm Training Guide for Employees and Volunteers; and FSMA Produce Rule Summary for: Table Grapes, Wine Grapes, and Hops (3 separate documents). The NCR FSMA Center can be accessed at [ncrfsma.com](http://ncrfsma.com) or [ncrfsma@iastate.edu](mailto:ncrfsma@iastate.edu).

# **Mobile Produce and Practicing Food Safety Project**

## **Small, Voulynnne**

### **Background / Problem**

Twenty-four percent of Guilford County's population live within areas that are considered to be food deserts, which are more often ridden by poverty. Such communities, also, have high crime activities and are magnets for negative attitudes and behaviors that is often described as amenace to society. In addition, these communities have minimal access to resources. The youth within these communities are targeted to become community advocates for food safety and nutrition, promoting life-changing attitudes and behaviors.

### **Methods**

Develop a hydroponic garden to produce fresh vegetables, herbs and fruits that are delivered to the families and neighbor of these youth. The youth are learning about career options in vegetable growing while they are developing an understanding of safe food and healthy living, that they are sharing and promoting within their communities.

### **Results/Significance or key outcomes**

1. A functional hydroponic greenhouse has been created that produces vegetables, fruits and herbs that are delivered within their neighborhood, which are food deserts.
2. Youth are demonstrating positive prosocial attitudes and behaviors.
3. Youth are assuming leadership roles within their communities by conducting workshops and seminars that promote safe food practices and mobile career options.

## Local Produce Safety Initiative

**Tripp, Patricia**; Fatkey, Tay; McSwain, Karen

As the demand for local food grows nationwide, wholesale and institutional buyers have entered the local arena, extending the market beyond traditional direct market venues. In addition, sales through intermediated channels, such as food hubs and cooperatives, are requiring produce suppliers to be Good Agricultural Practices (GAP) certified and implement traceability programs.

# **Food Safety Education and Outreach Program for Small and Socially-Disadvantaged Farmers**

## **Vaughan, Barrett T.**

This Community Outreach Project will develop and pilot produce food safety Good Agricultural Practices (GAP) and Food Safety Modernization Act (FSMA) compliance education and outreach materials suitable for small and socially-disadvantaged farmers. The objectives are to: (1) Survey, and adapt where necessary, existing and released “in-development” produce food safety GAP and FSMA compliance education and outreach materials suitable for the targeted farmers for large-group trainings and on-farm demonstrations; (2) Provide produce food safety GAP and FSMA compliance in-service, “Train-the-Trainer” training to GAP-certified training farmers and demonstration leader farmers, and; (3) Pilot the adapted produce food safety GAP and FSMA compliance education and outreach materials at large group trainings and on-farm demonstrations with the targeted farmers. The expected deliverables are a set of education and outreach materials and on-farm demonstration modules suitable for small and socially-disadvantaged farmers and adaptable to other farmer audiences.

## **Environmental Assessments to Customize Food Safety Training for Very Small to Small Producers in the Southeastern United States**

Gibson, Kristen E.; Yeargin, Thomas; Fraser, Angela

This Community Outreach Project will develop and pilot produce food safety Good Agricultural Practices (GAP) and Food Safety Modernization Act (FSMA) compliance education and outreach materials suitable for small and socially-disadvantaged farmers. The objectives are to: (1) Survey, and adapt where necessary, existing and released “in-development” produce food safety GAP and FSMA compliance education and outreach materials suitable for the targeted farmers for large-group trainings and on-farm demonstrations; (2) Provide produce food safety GAP and FSMA compliance in-service, “Train-the-Trainer” training to GAP-certified training farmers and demonstration leader farmers, and; (3) Pilot the adapted produce food safety GAP and FSMA compliance education and outreach materials at large group trainings and on-farm demonstrations with the targeted farmers. The expected deliverables are a set of education and outreach materials and on-farm demonstration modules suitable for small and socially-disadvantaged farmers and adaptable to other farmer audiences.





