

2019 Annual Report of Accomplishments and Results

LOUISIANA
[Louisiana State University Agricultural Center - Research]
[Louisiana State University Agricultural Center - Extension]
[Southern University Agricultural Research and Extension Center - Research]
[Southern University Agricultural Research and Extension Center - Extension]

I. Report Overview

The NIFA reviewer will refer to the executive summary submitted in your Plan of Work. Use this space to provide updates to your state or institutions as needed.

1. Executive Summary (Optional)
<p>Consistent with Southern University System reorganization plan of 2016 which combined the roles of administering the SU Ag Center and the College of Agricultural, Family and Consumer Sciences (CAFCS) at Southern University and A&M College, Baton Rouge into one with the title of Chancellor-Dean; on August 23, 2019, Dr. Orlando F. McMeans was named as the new Chancellor-Dean. In this capacity, Dr. McMeans serves as Chancellor of the Southern University Agricultural Research and Extension Center (with research and cooperative extension components) and also as Dean of the College of Agricultural, Family and Consumer Sciences (with academic component).</p>

II. Merit and Scientific Peer Review Processes

The NIFA reviewer will refer to your Plan of Work. Use this space to provide updates as needed or activities that you would like to bring to NIFA’s attention.

Process	Updates
1. The <u>Merit Review Process</u>	No updates
2. The <u>Scientific Peer Review Process</u>	No updates

III. Stakeholder Input

The NIFA reviewer will refer to your Plan of Work. Use this space to provide updates as needed or activities that you would like to bring to NIFA’s attention.

Stakeholder Input Aspects	Updates
1. Actions taken to seek stakeholder input that encouraged their participation with a brief explanation	No updates
2. Methods to identify individuals and groups and brief explanation.	A concerted effort was made to allow various individuals of diverse age, racial, ethnic, gender, and educational backgrounds to participate in the process by rotating advisory committee members while maintaining equal representation of the target audience on the stakeholder committees. Listening sessions and focus groups also provided opportunities to identify individuals and groups to participate in providing stakeholder input.

<p>3. Methods for collecting stakeholder input and brief explanation.</p>	<p>No updates</p>
<p>4. A Statement of how the input will be considered and brief explanation of what you learned from your stakeholders.</p>	<p>The major means of utilizing stakeholder input continued to involve assisting faculty and staff in identifying emerging issues and in evaluating ongoing programs. For instance, we redirected research and extension programs activities to include hemp, and medicinal plant/functional food. Stakeholder advisory input, information from listening sessions, etc. helped to redirect resources to include the aforementioned programs activities. The SU and LSU Ag Centers increased the establishment of school gardens to help provide fresh vegetables, boost physical activities, educate youth about healthy living and improve health.</p>

IV. Planned Program Table of Contents

No.	Program Name in order of appearance
1.	Childhood Obesity
2.	Climate Change (Natural Resources & the Environment)
3.	Family and Human Development
4.	Food Safety
5.	Global Food Security and Hunger
6.	Horticulture
7.	Resilient Communities and Economies
8.	Sustainable Energy
9.	Youth Development

V. Planned Program Activities and Accomplishments

Please provide information for activities that represent the best work of your institution(s). See Section V of the Guidance for information on what to include in the qualitative outcomes or impact statements. Add additional rows to convey additional accomplishments. You may expand each row as needed.

No.	Title or Activity Description	Outcome/Impact Statement	Planned Program Name/No.
1.	Diet and Health	<p>Issues According to 2018 Behavioral Risk Factor Surveillance System data, the diabetes rate in Louisiana is 14.1%, making it the 4th highest rate in the nation. The economic burden of the disease is tremendous. In 2017, it was estimated that direct medical expenses for people diagnosed with diabetes exceeded \$4.2 billion.</p> <p>What was done? In Louisiana, the Dining with Diabetes curriculum is used to reach individuals living with diabetes and those who are at risk of developing diabetes. The program consists of a series of five classes that emphasize menu planning, portion control, label reading and physical activity. Classes were held at 10 sites across the state, reaching 82 people. Evaluation data were collected from adult program participants at three different points: before beginning the program, at the conclusion of the program, and at approximately eight weeks after the program ended. Program participants were evaluated in three areas: knowledge of nutrition and diabetes facts, overall daily adherence to recommended practices to manage diabetes (behavior), and use of food consumption recommendations to manage diabetes.</p> <p>Results Two groups of responses were analyzed separately: (1) participants who had matched pretests and posttests (n = 59) and (2) participants who had matched pretests, posttests, and follow-up tests (n = 23).</p> <ul style="list-style-type: none"> • Participants in group one (n = 59) had a statistically significant (p < 0.05) 	Childhood Obesity

		<p>increase in knowledge from pretest (M = 49.26) to posttest (M = 66.46).</p> <ul style="list-style-type: none"> • Participants in group one (n = 59) had a statistically significant (p < 0.05) change in behavior from pretest (M = 3.65) to posttest (M = 4.60). • Participants in group one (n = 59) had a statistically significant (p < 0.05) change in food consumption practices from pretest (M = 3.22) to posttest (M = 3.53). • Participants in group two (n = 23) also had statistically significant (p < 0.05) increase in knowledge (pretest M = 48.96; posttest M = 69.36), behavior (pretest M = 3.51; posttest M = 4.67), and food consumption practices (pretest M = 3.00; posttest M = 3.56). The follow-up survey was distributed approximately eight weeks after the posttest/end of program. There were no statistically significant changes. Mean scores decreased slightly for knowledge (follow-up M = 63.66) and behavior 4.41) and increased slightly for food consumption practices (follow-up M = 3.56). Across all three variables, the scores at follow-up remained higher than the pretest means. 	
2.	Youth Nutrition	<p>Issues</p> <p>Louisiana ranks number 3 in the United States in childhood obesity according to research done by the Robert Wood Johnson Foundation. This study shows that 20.8% of children 10 through 17 years old are considered to be obese. This percentage has only grown over the last years and is on track to increase further if changes do not begin to happen.</p> <p>What was done?</p> <p>Louisiana 4-H's Health Living program aims to address the issue to childhood obesity by specifically serving youth in that 10 to 17-year-old age range and teaching them healthy habits. The Louisiana Food and Fitness Board is comprised of high school students who have been trained in USDA MyPlate standards. The teens then educate the communities at the parish level through</p>	Childhood Obesity

		<p>food and fitness workshops and day camps. A total of 5,689 youth and 166 teens were reached with at least 6-8 hours of nutrition education. In addition, 1,972 family members were reached. The education was conducted through a series of lessons and one-time events held during school hours, at school gardens, or in after school events and workshops.</p> <p>Results</p> <p>Survey results from youth that participated in Healthy Living programs showed that:</p> <ul style="list-style-type: none"> • 72% of participants stated that they learned more about healthy food choices because of the program. • 49% of youth surveyed are now paying attention to water consumption. • One-third of youth had brought healthy meal and snack ideas back to their families, increasing the community reach of the program. <p>This knowledge will carry into the rest of their adult lives in hopes of creating a healthy habit and lifestyle.</p>	
<p>3.</p>	<p>Controlling Obesity with Diet - Nutrition and Health</p>	<p>Issues</p> <p>Obesity is a critical health threat to families across the United States and closely linked to cancer. The medical costs for people who are obese are generally higher than those of normal weight. The prevalence of obesity has steadily increased over the past 35-40 years among children and youth in the United States. Louisiana youth are among the unhealthiest in the nation; 36% of 10-17 year olds are overweight and 53% don't exercise regularly. In Louisiana, 40.5% of African Americans are classified as overweight or obese. Transitioning to college is a critical period for college students and the first years of college life are associated with significant weight gain for many students. The average increase in weight the first semester in college has been 3.5 to 7.8 pounds (1.5-3.5 kg). The term “freshmen 15” has been used as a reference to the fifteen pounds (~7 kg) accumulated during the first year of college.</p> <p>What was done?</p>	<p>Childhood Obesity</p>

		<p>Nutrition and Health Program received a grant to conduct research using freshman students. Thirty-one (31) African American freshman students were recruited to participate in the study. They were weighed before and after the study. The study was conducted in two semesters (one fall and one spring semester) which lasted 15 weeks each semester. The study design was a cross over design with each student being their own control. Half of the semester they received <i>Whey Protein and Resistant Starch</i> bar (7 weeks), then one week of wash out, and the other 7 weeks they did not receive the bar. The goal was to determine benefits of consuming whey protein/resistant starch bars for breakfast in reducing body fat. Nutrition education and physical activities intervention were incorporated into the study. Majority of the participants experienced weight loss up to 17 pounds. Information and findings from the project were shared with the scientific as well as the extension communities.</p> <p>Results</p> <ul style="list-style-type: none"> • Some participants in the study recorded weight loss up to 17 pounds. • Participants (15) who did not lose weight, did not gain weight either. • Participants lost as much as 10 percent of their body weight on average. The results of this study have practical and promising significance in decreasing risk of obesity-related diseases and medical expenses for families. • Participants reported that by eating breakfast (Jag Bar), paying close attention to what, and how much they ate in the family settings, being physically active, they lost weight, felt better, and were performing better at school. • One of our undergraduate students presented a poster titled “Eating Healthy on The Go” at the One Health Symposium organized by Southern University Ag Center. • In 2019, two poster presentations of the study (one by an undergraduate student) were made at the 19th Biennial Symposium of 1890 Association of Research Directors (ARD) in Jacksonville, Florida. 	
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		<ul style="list-style-type: none"> • Participants and their families increased knowledge regarding healthy behavior practices and some even changed their eating habits after 15 weeks of intervention. • One of the participants stated: “This program has been very beneficial to me and my family. Through this program I have learned to change my eating habits, which has also enabled me to be a role model to my family. My reason for joining this program was to better educate myself on how to live a healthier lifestyle and to also lose weight.....” 	
<p>4.</p>	<p>Master Farmer Program</p>	<p>Issues Federal and state policies and research by land grant universities continue to emphasize nutrient stewardship as an opportunity for agricultural producers to minimize environmental and economic impairments of water quality deterioration. Although water quality protection policies such as the Clean Water Act are of considerable debate, most states have assumed responsibility for designing and implementing control measures to protect water quality. Central to such strategy is the identification of management practices currently adopted and those that need to be adopted, which would minimize runoff of nutrients and other contaminants to surface and groundwater sources. Several practices, often referred to as Best Management Practices (BMPs) are evaluated and promoted by land-grant universities, environmental agencies, and conservation agencies to address nutrient management issues in agricultural production. Louisiana's Master Farmer program is a direct effort to promote adoption of BMPs in crop and livestock production in the state.</p> <p>What was done? In the previous four years, 1220 individuals have completed the educational phase of the Louisiana Master Farmer program. Approximately 50 classes were</p>	<p>Climate Change (Natural Resources & the Environment)</p>

		<p>held during that time period. Educational lessons focus on topics like The Clean Water Act (CWA) of 1972, national and Louisiana water quality standards, total maximum daily loads (TMDLs), effects of nonpoint source pollution on the coastal zone and the Gulf of Mexico, best management practices, the role of conservation districts in conservation planning and implementation, resource conservation planning processes, farm bill conservation programs, and spill prevention control and counter measures.</p> <p>Results</p> <p>Results from a survey of 17 farmers conducted in February 2020 included the following responses about farmer use of best management practices:</p> <ul style="list-style-type: none"> • 100% of the farmers reported using cover crops to increase fertility and reduce erosion and suppress weeds • 88.2% (n = 15) reported that they place fertilizer appropriately for the crop's needs • 82.4% (n = 14) reported that they used minimum tillage and matched the amount of fertilizer used to the crop's needs • 76.5% (n = 13) reported applying fertilizer at the right time for the crop's needs 	
<p>5.</p>	<p>Climate Change and Natural Resource Education</p>	<p>Issues</p> <p>The Earth's climate has changed throughout history. Most of these climate changes are attributed to very small variations in Earth's orbit that change the amount of solar energy our planet receives (https://climate.nasa.gov/evidence). Scientists attribute the global warming trend observed since the mid-20th century to the human expansion of the "greenhouse effect" - warming that results when the atmosphere traps heat radiating from Earth toward space. Certain gases in the atmosphere block heat from escaping. Long-lived gases that remain semi-permanently in the atmosphere and do not respond physically or chemically to changes in temperature are described as "forcing" climate change.</p>	<p>Climate Change (Natural Resources & the Environment)</p>

	<p>Gases, such as water vapor, which respond physically or chemically to changes in temperature are seen as "feedbacks." Others gases are, Carbon dioxide (CO₂), Methane, Nitrous oxide (N₂O), and Chlorofluorocarbons (CFCs). Effects that scientists had predicted in the past would result from global climate change are now occurring: loss of sea ice, accelerated sea level rise and longer, more intense heat waves.</p> <p>For Louisianans, the climate crisis is already an everyday reality, especially when it comes to hurricanes, flooding, and sea-level rise. According to one EPA publication (August 2016 EPA 430-F-16-020), in the coming decades, Louisiana will become warmer, and both floods and droughts may become more severe. Unlike most of the nation, Louisiana did not become warmer during the last century. But soils have become drier, annual rainfall has increased, more rain arrives in heavy downpours, and sea level is rising. Our changing climate is likely to increase damages from floods, reduce crop yields and harm fisheries, increase the number of unpleasantly hot days, and increase the risk of heat stroke and other heat-related illnesses https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-la.pdf.</p> <p>What was done? We conducted a project aimed at advancing urban forestry and natural resource education in collaboration with Columbia University and USDA Forest Service. The project was intended also to develop leadership and prepare the next generation for sustainable natural resources management scientists. We organized and hosted three i-Tree Model Application Workshops, one Costal Ecosystem and Climate Change Student Forum, and one Public Lecture. The workshops included: i-Tree Canopy Model Application Workshop, Feb 13-22, 2019; i-Tree Canopy Model Application Workshop, Sept 19, 2018; i-Tree Design Model Application Workshop, Sept 26, 2018. Others were, the Endowed Professorship Public Lecture Series, Nov 6-7, 2018; Costal Ecosystem and Climate Change Student Forum, Dec 4, 2018. The project provided participant</p>	
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		<p>support to two students for their professional development through attending Society of American Foresters National Convention and International Society of Arboriculture Conference. In addition to i-Tree Model, the project incorporated flooding and elevated CO2 level into students' research training. The uniqueness of the training is that the research tested the combined effects of two stressors, flooding and elevated CO2, which was not done before.</p> <p>Results</p> <ul style="list-style-type: none"> • 95 percent of the participants in the workshops and i-Tree trainings said they gained new knowledge and skill about assessing climate change while 93 percent of them indicated that they will definitely utilize knowledge and skills gained. • One doctoral student completed his dissertation and another is in the process of completing also. The project team members published one refereed article and 5 abstracts, and presented 6 papers at the following events, 1890 Association of Research Directors 19th Biennial Research Symposium, Society of American Foresters National Convention, AEHS Annual International Conference on Soils, Sediments, Water, and Energy, and the Annual Meeting of the Louisiana Academy of Sciences. • Under the research guidance of the project Co-PIs, two doctoral students have been applying the current version of i-Tree Eco Model to assess climate change mitigation ability of the urban forests in two communities adjacent to our campus and are in the process of analyzing data and writing the research results. • The project incorporated climate change induced stressors such as elevated CO2 level in conjunction with flooding into students' research training and extension agents' workshops. • The project has been utilized as a recruitment tool, by providing i-Tree Canopy Model hands-on training to high school students. • A new project titled "Quantifying Carbon Export through Vegetation, Biomass and Land Use Change Analysis of Two Contrasting Coastal Sites across Mississippi River Delta Plain" was funded by LA-NASA ESPCOR 	
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		<p>program in the amount of \$345,000 with the collaboration with Louisiana State University.</p>	
<p>6.</p>	<p>Second Chance 2 Recover</p>	<p>Issues In 2018, Blacks made up 12.5% of the total U.S. population but, [U.S. Bureau of Justice Statistics (BJS)]; non-Hispanic black males accounted for 33% (down from 37% in 2013) of the total male prison population, and Hispanic males 15% (down from 22% in 2013). Louisiana is home to many prisons and correctional institutions. http://www.huffingtonpost.com/bill-quigley/louisiana-number-one-in-i_b_9888636.html. Majority of those who are incarcerated are young males of African-American descent. Once incarcerated, most of these prisoners do not have enough rehabilitation to deal with the stress associated with being away from their families and the larger free society once they are released. “In 2014, the U.S. Department of Justice confirmed that Louisiana remained number one, among the 50 states, with 38,030 in prison, a rate of 816 per 100,000. Because the US leads the world in incarcerating its people, this means Louisiana is number one in the world” (The Huffingtonpost, May 10, 2016). Despite acquiring technical and other useful job enhancing skills while in prison, the prisoners do not have the skills to write and submit good resumes for jobs. Upon release from prison, most of these individuals will re-offend as a result of not having access to adequate post-prison rehabilitative services, which lead to their being imprisoned again. “Using a Bureau of Justice Statistic study finding, inmates released from state prisons have a five-year recidivism rate of 76.6%, the USSC study calculated comparable federal prisoners released have a 44.7% re-arrest rate after five years.” http://www.huffingtonpost.com/christopher../report-documents-us-rcid_b_9542312.html. There is an overwhelming need for these individuals to receive broad trainings in resume writing and for parents, training in stress and anger management before being released from prison. These individuals, their families, and society in general could benefit from the skills acquired before the prisoners are released.</p>	<p>Family and Human Development</p>

		<p>What was done? Second Chance 2 Recover (a prison pre-release/re-entry program) classes were conducted at three correctional institutes. While 4-H LIFE (a living interactive family education) classes were conducted at two parishes (county). Our staff and volunteers provided life skills classes to inmates who were within 3-6 months of being released. One class is a replication from the University of Missouri’s 4-H LIFE program which provided parenting classes to inmates and affords inmates an opportunity to have intimate family visits, using a 4-H meeting model. The other, “Second Chance 2 Recover” includes a mentoring and caregiver component to provide additional support to the family and child. Our faculty and staff utilized 1890 Extension Funds along with external grants to conduct prison pre-release/re-entry “Second Chance 2 Recover” and living interactive family education “4-H LIFE programs to inmates. Program staff were meticulously instructed on how to deal with incarcerated individuals and how to conduct workshops in prison and correctional establishments. Workshops were conducted for prisoners who are parents, resume writing sessions were conducted with the following topics: Budgeting, Money Management, Addictive Behaviors, Anger Management, Communication Skills, Developing Job Skills and Plan of Action (<i>This class includes inmates developing a plan of action to implement once they are released</i>), Resiliency and Optimism, and Self-Esteem. Job/Resource Fair was also conducted. Inmates received health and business startup information from the Communities of Color Network and the Center for Small Business and Economic Development of the SU Ag Center. In all 36 classes were conducted at the different sites for 635 inmates. There were additional 270 family members participating in various activities.</p> <p>Results</p>	
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		<ul style="list-style-type: none"> • 635 inmates who attended the workshops/training sessions gained knowledge and learned how to handle anger and stress and how to write resumes and prepare for successful job interviews. • 92 percent indicated that they will avoid stress and anger because the lessons they learned had actually given them facts to consider and be thankful for. • 93 percent of the participants who attended the sessions developed their own resumes. • 100 percent of those who developed resumes indicated that it will benefit them with finding gainful employment once they are released from prison. • 100 percent of those who developed resumes also indicated that they will do everything possible to keep from returning to prison. • 198 youth attended the family event/visit and were reunited with their parents who were incarcerated. • 100 percent of participants said they will recommend our workshop, sessions and family visit to others. 	
<p>7.</p>	<p>Childcare providers continuing education</p>	<p>Issues Children living in low income families are usually less likely to be enrolled in child care center or early childhood education program. Louisiana has about 15,000 childcare providers and over 215,900 children are enrolled in or in need of child care. About 12,000 of the workers are in licensed child care facilities or registered family child care homes. According to the Early Childhood Care and Education 2018 Annual Report, demographics of the Early Learning Center Workforce (based 17,429 active Pathways members) indicated as follows: 99.6% are female, 54.8% are African-American (35.5% Caucasians), 58.6% with high school education or no verified degree, 14.8% CDA or approved career diploma, 10.1% associate degree, and 36.5% bachelor degree or higher. There was an overwhelming need for early child care along with continuous and comprehensive training for parents with limited or no resources and a lack of self-sufficiency. There is a strong connection between high quality early</p>	<p>Family and Human Development</p>

		<p>childhood programs and later success in school. Parenting programs help parents develop skills that will provide positive and effective parenting. The culturally sensitive program provides educational information basis norms and family values.</p> <p>What was done? The state of Louisiana requires that child care providers have 12 hours of continuing education hours annually, especially if they are to receive monetary benefits from the state for services rendered to limited income families. To ensure that childcare/head start providers deliver quality care, 954 providers received at least six hours of professional training. Classes taught were based on the competency levels of the Child Development Associate (CDA) Credential. In FY 2019, sessions were conducted in partnership/collaboration with faith based-organizations ministries, and families. Additionally, workshops were organized for parents, head start and child care centers with 127 in attendance. The Parents Preparing for Success Program (PPSP) was conducted in 14 parishes (Avoyelles, East Baton Rouge, East Carroll, East Feliciana, Evangeline, Livingston, Morehouse, Orleans, Rapides, St. James, St. Tammany, Tangipahoa, Washington, and West Carroll). We received over \$377,000 in grant funds from the state for the trainings. In addition, funds from the 1890 Facilities Grants Program were used to renovate the Child Development Laboratory which re-opened in FY 2019. This facility houses hands-on trainings for professionals who need re-tooling and students who need to participate in practicum.</p> <p>Results - The 954 Childcare/ Head Start providers who attended classes conducted by the SU Ag Center saved over \$286,200 in fees and charges. - In the newly renovated Child Development Laboratory, hands-on and practical training of childcare/Head Start providers and an interactive environment practicum offering for our students graduating with concentration in child development and also nursing were enhanced.</p>	
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		<ul style="list-style-type: none"> - A survey of the participants showed that 94 percent knowledge and skills gained and some behavior changes as a result of attendance at the training. - Childcare/head start owners who participated in the training sessions said they will ensure that their employees continue to participate in such trainings to ensure quality and efficient services for their clients. - A total of 107 participants graduated after completing all requirements for certification. 	
<p>8.</p>	<p>Food Safety</p>	<p>Issues FDA mandates training in Hazard Analysis Critical Control Point (HACCP) for seafood processors. In addition, since March 2016 USDA/FSIS mandates training on seven principles of HACCP applied to meat, poultry, and Siluriformes (catfish). HACCP courses teach the principles of HACCP and empower processors to develop HACCP plans specific for each seafood product they handle or produce. Louisiana ranks second in metric tons of seafood landed and third in dollar value in the US, resulting in a high demand of training programs to allow the local seafood, meat, and poultry industry to be in compliance with federal, state and local requirements. HACCP training offered to the industry provides an educational opportunity to existing and prospective seafood, meat, and poultry businesses to maintain their floor supervisors trained on hazard analysis and critical control points. In addition, fishermen receive the knowledge needed to start processing their catch.</p> <p>What was done? During 2019, the LSU AgCenter offered three three-day HACCP trainings designed to educate seafood, meat, and poultry processors, packers, wholesalers, importers, harvesters, and warehouses about food safety. A catfish compliance section was added at the end of the seafood workshop to assist catfish processors to understand USDA/FSIS specific requirements. Participants</p>	<p>Food Safety</p>

		<p>who complete the courses receive a certificate, which fulfills the FDA requirements for seafood HACCP training and USDA requirements for HACCP training targeting Meat, Poultry, and Siluriformes. These workshops were offered at the LSU AgCenter located in LSU Baton Rouge Campus, one in the winter, one in the spring, and one in the summer. These workshops were offered in collaboration with Association of Food and Drug Officials (AFDO), National Seafood HACCP Alliance (SHA), U.S. Food and Drug Administration (FDA), U.S. Department of Agriculture/Food Safety Inspection Service (USDA/FSIS), Louisiana Department of Health (LDH), Louisiana Department of Agriculture and Forestry (LDAF) and Southern University Agricultural Research and Extension Center.</p> <p>Results</p> <p>A total of 64 individuals from state and out of state seafood industry attended the two workshops. At the end of the workshop, attendees fill an impact survey including demographic information, knowledge before and after covered materials, and confidence before and after to complete duties associated with covered material. Based on the impact survey completed by attendees,</p> <ul style="list-style-type: none"> • 61% of attendees feel their knowledge of the covered material increased • 80% of attendees increased confidence in completing tasks required under HACCP regulation <p>Through these workshops, we have been able to support local and nationwide food industry, creating and maintaining businesses and also creating and maintaining job opportunities.</p>	
9.	Food Safety	<p>Issues</p> <p>Foodborne illnesses caused by over 30 major pathogens are estimated to affect approximately over 9 million people in the United States every year. Millions of people become sick every year after eating food contaminated with pathogenic</p>	Food Safety

		<p>bacteria or their toxins, or through personal contact with people exposed to foodborne pathogens. Most cases of foodborne illness can be prevented through hygienic practices such as handwashing and by routinely following proper food handling and preparation recommendations. However, recent outbreaks of foodborne illness associated with fresh produce such as lettuce and spinach underscore the importance of preventing contamination at all levels of farm to table. It is vitally important that consumers properly wash their hands before handling food and they understand the reasons for proper handwashing. Educating public about following proper food safety practices are crucial. Food safety is a critical necessity for any dining and serving food experiences. Food safety trainings need to be enhanced through extension programs.</p> <p>In settings such as community events, camps, church dinners, fairs or in child and adult care centers, the individuals responsible for handling food may include volunteers and paid staffs who have inadequate training in food safety. Individuals, including volunteers, school personnel, teachers and staff are often unaware of the risks.</p> <p>What was done?</p> <p>ServSafe is a food and beverage safety training and certificate program administered by the National Restaurant Association. The program is accredited by American National Standards Institute (ANSI) and the Conference for Food Protection. Southern University Agricultural Center offers food safety (ServSafe) certification program to the public and Food Handler Trainings. Food safety is a critical necessity for any dining and serving food experiences. The Louisiana Department of Health and Hospitals requires that food facilities have at least one ServSafe certified personnel on board. Also, in order for the food facility owners to pass the health and food safety inspection required by State and Government, they have to have the ServSafe certificate.</p> <p>Food Handler Training is a 5-week program and participants receive a certificate of completion. In FY 2019, five food handler trainings were conducted and 474</p>	
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		<p>persons received their certificate of completion. Among the certificate recipients, the individuals who were interested in receiving the ServSafe training attended an all-day class, took (and passed) the recommended examination. The examinations were graded by ServSafe and the participants who passed the test received an official certificate from ServSafe which is valid for five years. In addition, we conducted 12 ServSafe trainings and certifications across the state for 75 restaurant owners, mobile food truck owners, school personnel and new food business owners.</p> <p>Results</p> <ul style="list-style-type: none"> • Follow-up survey of participants indicated that 100 percent of the participants gained new knowledge and skills and are putting knowledge gained into practice. These individuals are also educating/recruiting other food facility owners/workers to attend the training for certification. • A survey conducted with participants indicated that 100 percent of the attendees in the ServSafe training have made some adjustments in the ways that food are handled in their facilities. • Four hundred and seven-four (474) individuals representing several food handling organizations received food handler training and certification. • Seventy-five (75) restaurant owners, mobile food truck owners, school personnel and new food business owners received ServSafe trainings and certifications from different parishes across the state. • Fifteen (15) extension agents received ServSafe trainings and certifications in order to educate the citizens of the communities on food and nutrition and healthy food preparation choices. • As a result of the SU Ag Center’s program, at least 52 food facilities in the state have at least one ServSafe certified personnel on board as required by Louisiana Department of Health and Hospitals. 	
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<p>10.</p>	<p>Food Access</p>	<p>Issues According to the 2018 overall food insecurity data, the food insecurity rate in Louisiana was 16.1%. According to Feeding America and the USDA, this is a measure of occasional “lack of access to enough food for an active, healthy life for all household members and limited or uncertain availability of nutritionally adequate foods. Food-insecure households are not necessarily food insecure all the time. Food insecurity may reflect a household’s need to make trade-offs between important basic needs, such as housing or medical bills, and purchasing nutritionally adequate foods.”</p> <p>What was done? Programs have included the formation of a backpack program that provided food for children in need who did not have secure food access, the establishment of community gardens to provide fresh produce in communities where there was little or no access to fresh and affordable vegetables, and the acceptance of EBT benefits and senior citizen vouchers at local farmer’s markets.</p> <p>Results</p> <ul style="list-style-type: none"> • 1,125 weekend packs and 160 weekly food packs were sent home with 75 children, thus reducing the hunger gap for those children and providing access to healthy food. • 500 pounds of produce was donated to food-insecure adults each year for two years. • 100 residents have used EBT and senior citizen vouchers to purchase fresh produce, weekly, for the past two and a half years. <p>50 cucumbers were donated to a senior feeding program for use in meal boxes delivered to low-income senior citizens.</p>	<p>Global Food Security and Hunger</p>
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<p>11.</p>	<p>Agricultural Leadership Institute</p>	<p>Issues Formal training and instruction in leadership development is a crucial skill which had not been offered to small, limited resource agricultural producers in the state of Louisiana (and possibly in the country). Economic crisis in Louisiana over the past two decades, especially the high cost of farm inputs during FY 2019 made it difficult for producers to compete and remain profitable. The existence of many small farmers is in serious jeopardy as they are debt-ridden and are on the verge of being bankrupt. The Small Farmer Agricultural Leadership Training Institute at Southern University Agricultural Research & Extension Center was designed to address these needs with the goal of promoting small & family farm sustainability, survival and profitability through enhanced decision making skills and leadership development. The goal was to help farmers become better leaders while enhancing their overall farm management skills. The Louisiana Small Farmer Leadership Institute was modelled after the National Institute which has been recognized in the United States and abroad.</p> <p>What was done? Seven leadership sessions were conducted during the period using three 4-day intensive training workshops (lasting over 8 hours each day). To further expand hands-on knowledge of participants, field trips were held to several states, Louisiana, Texas, Mississippi, Georgia, etc., this institute is open to and has served socially disadvantaged farmers, ranchers and producers in the other states with an 1890 institution. In FY 2019, we had 33 producers who attended each session March 14-16, 2019. Topics discussed were: Developing the Leader Within, Planning the Business and the Team, Agricultural Legal Issues and Risks, Taking it to the Next Level, Agricultural Opportunities Unlimited (Summer Tour featuring Urban Agriculture), Civic Engagement, etc. As usual, the Louisiana Commissioner of Agriculture & Forestry Dr. Mike Strain addressed the participants and Mr. Randolph Joseph, Jr., Assistant State Conservationist, Field Operations for the Natural Resources Conservation Service and Ms. Kathy Broussard, state statistician for the United State Dept. of Agriculture's National Agricultural Statistics Service (NASS), Delta Regional Office along with other officials from other USDA agencies also provided updates to participants.</p>	<p>Global Food Security and Hunger</p>
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		<p>Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, Ohio, South Carolina, Tennessee, Texas, Virginia, and West Virginia.</p> <ul style="list-style-type: none"> • Other graduates from the Louisiana Small Farmer Leadership Institute indicated that they are accomplishing the following: • Mentoring other farmers and potential or business owners • Helping improve their community • Serving on a local, state or national committees • Improving my business decisions • Increasing business income 	
<p>12.</p>	<p>Master Gardener Program</p>	<p>Issues Louisiana has an estimated 627,300 home gardens, including backyard fruit trees, vegetable plots, and berry patches, with a projected annual production of \$522 million (2018 Louisiana Agriculture Summary). There also are countless home landscapes requiring maintenance and development that relates to an ever-increasing need by consumers for research-based horticulture information, training and timely access to LSU AgCenter resources. Reduced numbers of personnel coupled with increased interest in consumer horticulture, home gardening and home grounds has exacerbated the need for trained volunteers to assist in the delivery of quality educational horticulture programs. The Louisiana Master Gardener (LMG) Program was developed to train volunteers who strengthen the LSU AgCenter's ability to meet the educational needs of home gardeners in Louisiana.</p> <p>What was done? To become a certified Louisiana Master Gardener volunteer, individuals complete a standardized LMG training course and are required to donate 40 hours of service the first year and 20 hours each year thereafter to maintain</p>	<p>Horticulture</p>

		<p>certification. Now in its 21st year statewide, there are 29 LMG training programs that reach 59 of Louisiana’s 64 parishes. In 2019, the LMG Program trained 325 new volunteers.</p> <p>Though based on a standard curriculum, training classes vary greatly across the state. The local LMG coordinator schedules the classes based on the needs of the local clientele. Coordinators are also responsible for selecting the class structure and scheduling speakers. In 2019, Louisiana Master Gardener coordinators in the New Orleans area utilized a “flipped classroom” training approach, where students review the course recordings and handbook chapter beforehand and class meetings facilitate additional learning and reinforcement through hands-on learning. Three coordinators opted for a “hybrid” training approach in which some subjects were covered by three-hour lectures and other topics were covered in a “flipped” classroom. The remaining of the training series were covered with “traditional” lecture techniques.</p> <p>Results</p> <p>Louisiana Master Gardener trainees complete standardized pre-/post-tests, chapter quizzes and chapter feedback forms to help assess their understanding of material and evaluate the effectiveness of the training materials. Trainees also complete a standardized program evaluation at the conclusion of the training series.</p> <ul style="list-style-type: none"> • When asked to rate the extent to which the LMG training increased their knowledge of gardening, 98% of respondents in the 2019 Flipped Class indicated ‘Somewhat Agree’ or ‘Strongly Agree.’ • As it relates directly to volunteer efforts, respondents reported similar responses when asked about an increase in their ability to find answers to gardening questions. 	
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		<ul style="list-style-type: none"> • Course feedback from the Traditional class format offered in 2019 yielded nearly identical results to both questions. <p>A 2019 survey of active LMG volunteers provided insight on training effectiveness and why individuals have continued their volunteer efforts with the program. Of 102 respondents:</p> <ul style="list-style-type: none"> • 42% indicated volunteer/community service as the most important aspect of the Louisiana Master Gardener Program and • 31% reported the passion for horticulture as most important. <p>When asked about the importance of sharing garden knowledge with others:</p> <ul style="list-style-type: none"> • 89% reported the item as ‘Extremely Important’ or ‘Very Important.’ • 94% of respondents strongly agreed or agreed that the LMG Program is a valuable part of their community. <p>In 2019, the LMG Program trained 325 new volunteers, bringing the number of active volunteers statewide to 1,564. Louisiana Master Gardener volunteers reported more than 84,300 hours of volunteer service to Extension educational projects and accumulated more than 2 million mass contacts, exposing them to research-based, consumer horticulture information. This volunteer service has an economic value of \$2,477,198 to the state of Louisiana.</p>	
<p>13.</p>	<p>Financial Literacy</p>	<p>Issues Personal financial management courses are not universally taught in high schools or in colleges. Therefore, many Americans lack the financial acumen to navigate the increasingly complex world of finance. Economists and others in the financial service industry are deeply concerned about Americans low levels of financial literacy and the high societal costs of their financial illiteracy. Research suggests that financial illiteracy has caused many Americans to become mired in debt, to pay exceeding high interest fees, to face emergency expenses without adequate</p>	<p>Resilient Communities and Economies</p>

	<p>savings cushion, or to file for bankruptcy, among others. Because of low levels of financial literacy, many youth/college students do not understand how to budget, save, invest, or the importance of credit. Thus, many students borrow more money for college costs than they can comfortably repay from future earnings and many of these borrowers are having difficulties repaying their student loan debt. As of March 31, 2020, outstanding student loan debt totaled \$1.54 trillion and the delinquent rate (90+ days) stood at 10.75%. Additionally, the average loan for the Class of 2019 graduate was \$29,900. These statistics suggest that the lack of financial knowledge and acumen among America’s youth is a serious problem and it is not going to improve by itself.</p> <p>What was done?</p> <p>Given the problem alluded to above, we designed the research project so that it could assess levels of financial literacy among a selected group of youth and undergraduate students, track the effectiveness of instruction on basic financial concepts, and examine the role of socioeconomic and demographic characteristics on students’ knowledge, attitudes, and behavior. The study was conducted in 2018 and 2019. The survey used in the data collection process contained the five quiz questions from the National Financial Capability Survey and questions from other national financial literacy surveys given to high-school and college students. During the project, we also developed booklet titled, Lessons on Money, and distributed it to all participants. The booklet covered topics such as household budgets, credit and debt, time value of money, and saving and investing, among others. Instruction covered materials in the booklet and from other sources, while assignments required participants to complete monthly budgets and to compute simple and compound interest and car payments under various hypothetical scenarios, among others. For college participants, we measured instructional effectiveness and financial knowledge by comparing their pretest and posttest scores from two financial quizzes. Participants’ attitudes and behavior were captured by their responses to related questions on the posttest quizzes. The Lessons on Money booklet was distributed to more than 310 high-school and college students and adults who participated in the class activities, workshops, and seminars conducted.</p>	
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		<p>Results</p> <p>Early results suggested that a majority of the participants did not know how to: (i) use the Rule of 72; (ii) compute the growth in an investment over a given time period; (iii) determine the future values of an investment at a specific interest rate. On the questions derived from the National Financial Capability Survey which measured knowledge of interest computation, inflation, mortgage payments, and stock market risk, participants performed better on the posttest than on the pretest.</p> <ul style="list-style-type: none"> • Among previous participants in the financial literacy classes 92% indicated that they no longer bought as much on credit, that they had started some sort of savings account, that they had inquired more about interest rates before obtaining loans, and that they had been learning more about different types of investment opportunities. • Based on posttest, 90% of the participants agreed or strongly agreed that the financial literacy lessons changed their views about their money and 89% agreed or strongly agreed that they now had a better understanding of how interest and car payments were determined. • To the extent that participants gained substantial knowledge on managing their financial matters and if this leads to reduced debt burdens (especially student loan defaults) and increased savings along with reduced number of those filing for bankruptcy, then society will benefit especially when an unforeseen situation such as a global pandemic arises. • Knowledge and skills gained were shared with friends, family members and groups, to educate them on the need to become financially literate. • An undergraduate student mentored through the project used a subset of the project’s data to prepare and present a paper at a professional meeting and received the First Place Award for her paper. • The project director used materials developed from this project to conduct several workshops for faith-based groups and limited-resource families where 96% of participants indicated that they gained knowledge and skills about financial literacy. 	
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14.	Sustainable Energy	Due to the loss of funding, we have no report for this area.	Sustainable Energy
15.	Teen Leadership	<p>Issues</p> <p>The 4-H Youth Development program recognizes youth as important and valuable resources in communities. Through innovative educational lessons, civic engagement and meaningful leadership roles supported by caring adult partners, youth are equipped with confidence and leadership to be leaders today and in the future. Lesson study is a community of practice in which several educators take an active role in collaboratively plan, teach, observe, and revise a series of connected lessons based on continuous improvement. According to Dr. Janet Fox, the lesson study concept has been effective in developing and implementing lessons. Lesson study occurs within authentic contexts over an extended duration, fosters communication among educators, involves active learning, challenges existing ideas about teaching and develops new knowledge.</p> <p>What was done?</p> <p>Five parishes in the southwest region (Iberville, Jefferson Davis, Lafayette, St. Martin, and St. Mary) participated in a lesson study effort which included a series of 7 lessons adapted from Teen Leadership 20 by Ohio 4-H Youth Development. Of the five participating parishes, four implemented the lessons in their parish wide teen leadership club program and one implemented the lessons in high school level school based club program.</p> <p>Results</p>	Youth Development

		<p>Teen participants completed monthly reflection exercises on each lesson and a culminating evaluation (National 4-H provided Common Measures instrument). Sixty-nine of the participants agreed to and completed the Common Measures instrument. Of those completing the survey:</p> <ul style="list-style-type: none"> • 83% reported having 5 or more years of membership in the 4-H program, 32% were male and 68% female ranging in age from 12 to 18 years old in grades 7th – 12th. • Ninety-four percent (94%) of the respondents reported being involved at the state level of the 4-H program with 60% dedicating 2 or less hours weekly to the program and 40% dedicating 3 or more hours weekly. <p>In responding to the survey completing the sentence, Is 4-H a place where...</p> <ul style="list-style-type: none"> • 88% said adults care about them • 84% said they like to learn about people who are different from them • 83% said they are encouraged to plan for their future and were willing to work hard on something difficult • 81% said they feel safe; have a chance to be a leader; and, learn about ways to help their communities <p>An open ended question asking why they are involved in 4-H, the responses centered around helping the community, to have fun, make friends, expand horizons, and leadership development. In the open ended question of “what has been the most important thing you learned by being involved in 4-H”, the majority of respondents mentioned leadership in their response.</p>	
16.	<p>Youth Environmental Education</p>	<p>Issues The protection and restoration of coastal Louisiana is not just a concern for coastal Louisiana citizens, but is recognized as a state, national, and</p>	<p>Youth Development</p>

		<p>international challenge that will persist well into the next generations. Consequently, there is an increasing need to engage youth in the fight to protect Louisiana’s coast. To combat this need, a hands-on immersive summer camp was created for high school students. The 4-H Marsh Maneuvers summer camp offers an excellent opportunity to provide leadership in environmental education through the Youth Wetlands Program and partnering organizations. Marsh Maneuvers instills in youth of Louisiana a sense of stewardship that they can bring back to their community and carry with them into adulthood.</p> <p>What was done?</p> <p>Four Marsh Maneuvers camps are offered each summer. For each camp, students spend five days at Rockefeller Wildlife Refuge in Grand Chenier, LA where they have the opportunity to be immersed in the marsh while riding an airboat, planting smooth cordgrass, seeing coastal restoration projects from the Coastal Protection and Restoration Authority’s (CPRA) Coastal Master Plan, taking a guided walk of coastal habitat, and catching their own dinner. Students also get the chance to learn from experts through classroom style activities and lessons. These sometimes challenging, but rewarding experiences instill in their minds the wonder, complexity, value, and productivity of Louisiana’s coast. Participants experience biological diversity and complexity of coastal environments by examining life cycles and habitat requirements of wetland animals and plants. They participate in evaluating environmental quality through water quality testing and examining the hydrology of the watershed. Exercises in national resource management help develop an appreciation for the difficulty in balancing social, economic, and environmental needs. Some of the activities and lessons used to illustrate these concepts include: fishing, crabbing, cast netting, wildlife observation, seafood processing, policy debates, modeling, and a marsh grass stewardship project.</p>	
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		<p>Results</p> <p>Since 1987, over 1,700 4-H members have participated in Marsh Maneuvers. Fifty high school 4-H members participated in 2019. Pre and post-tests were administered to the participants.</p> <ul style="list-style-type: none"> • Test scores improved each week with an overall average increase in scores of 28.42 percentage points. • Students acquired new skills including throwing a cast net, holding live crabs, peeling and cooking shrimp, and dissecting alligator eggs and fish otoliths. • Approximately 2 acres of vegetated marsh will result from the marsh grass planting stewardship project. <p>About 5 months later, a follow-up survey given to a sample of 16 4-H'ers that attended the summer camps showed that:</p> <ul style="list-style-type: none"> • all respondents felt they were now more aware of the importance of coastal wetlands • 93.75% said that they follow current events related to wetlands, have applied what they learned at Marsh Maneuvers to their schoolwork, and are more motivated to explore a career related to conservation • 68.8% felt what they learned at Marsh Maneuvers enhanced some of their grades in school • 56.30% had written an essay, given a presentation, or conducted a service project that related to conservation since the summer <p>Student comments: "There were so many useful lessons and skills to take away from this camp...This camp has really opened my eyes to Louisiana's situation and also potential learning fields for me in the future. 10/10 would recommend." "Coming to camp allowed me to learn more about Louisiana's wildlife, aquaculture, marshes/wetlands and the dangers that our coastline has.</p>	
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		<p>I have also pushed myself out of my comfort zone this week! Who would have ever thought that [I] would be holding alligators, shrimp, fish and catching and boiling crabs!? It was also so much fun to do those things, as well as very interesting.”</p>	
<p>17.</p>	<p>Fast Track Youth Garden Training</p>	<p>Issues On any given day (2017), nearly 60,000 youth under age 18 are incarcerated in juvenile jails and prisons in the United States (ACLU: https://www.aclu.org/issues/juvenile-justice/youth-incarceration/americas-addiction-juvenile-incarceration-state-state). Most are held in restrictive, correctional-style facilities, and thousands are held without even having had a trial (https://www.prisonpolicy.org/reports/youth2019.html). Louisiana once had 151-225 per 100,000 Youth Incarceration Rate and the Ratio of Rates of Youth of Color to White Youth in Custody (2011) was 4.1 to 1 (https://www.aclu.org/issues/juvenile-justice/youth-incarceration/americas-addiction-juvenile-incarceration-state-state). The cost of keeping each youth in detention per day could be as high as \$500 (\$182,500 per year). According to Casey Group 2003, approximately 77% of the youth incarcerated in Louisiana are for non-violent crimes. The Louisiana Children’s Code places a high priority on keeping delinquent youth in their homes, when possible. According to the Casey Group 2003, when youth are incarcerated, it should be viewed as a failure for children to learn appropriate social behavior due to a lack of parenting. Southern University Agricultural Research and Extension Center (SUAREC) provides training in the field of agriculture to troubled youth in some correctional centers for youth.</p> <p>What was done? During the period, youth were able to maintain and expand gardens at the three correctional sites. They maintained 4’ x 8’ raised beds and an in-ground garden with 20’ x 50’. The participants had hands-on lessons as well as classroom lessons when it was raining or foggy. They planted mint, artichoke, lemongrass, broccoli, cauliflower, mustard greens, collard greens and luffa. Additionally,</p>	<p>Youth Development</p>

		<p>youth learned the importance of plant propagation, planting seeds correctly, plant identification, tilling and basic garden maintenance, and the benefits of gardening for mental and physical health. Forty-two (42) youth participated in the garden activities in 2019 this year but in small classes of 5-10 each session. Classes are held weekly. Behavior is the basis of who works in the garden and there is a fast turn-around with youth because the facility is a holding facility until recently arrested students go to trial to be released or sentenced to a longer term facility. The project staff usually meets with the director of each facility to review land use for the project, equipment and materials, and discuss overall program details for the year. In addition, youth learned the importance of plant propagation, planting seeds correctly, plant identification, tilling and basic garden maintenance, and the benefits of gardening for promoting good health. A new instructor and team worked with the youth who have already completed their GED.</p> <p>Results</p> <ul style="list-style-type: none"> • As a result of the youth attending classes 97 percent of participants developed awareness and increased knowledge in leadership development, basic horticultural knowledge, and nutrition. We received positive feedback from the students when asked to taste what was harvested. • Eleven (11) participants received certificates of completion this year to utilize in court decision and for job applications. • With the leadership of the new instructor, students have also extended the garden to be include additional 10' x 10' beds. • 95 percent of participants gained knowledge and skills in harvesting mustard greens, collard greens, green onions, strawberries, mint, basil, eggplant, peppers (sweet and hot) and other herbs. Youth also engaged in lessons on how to plant seed, and transplants appropriately, nutrition, entrepreneurship, and careers in agriculture. • The youth participants used knowledge gained in landscaping the front of their dorm area with ornamental and edible landscape and also have 	
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		(5) citrus trees on the school campus. Some youth who reside on campus were able to harvest, cook and eat a majority of the produce that came out of the garden with the assistance of their Residential Advisors.	
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