

## FY 2020 Annual Report of Accomplishments and Results

Virginia

Virginia State University  
and  
Virginia Polytechnic Institute & State University

### 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)

## 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 ONLY
1. The <u>Merit Review Process</u>	
2. The <u>Scientific Peer Review Process</u>	

### 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 ONLY
1. Actions taken to seek stakeholder input that encouraged their participation with a brief explanation	
2. Methods to identify individuals and groups and brief explanation.	
3. Methods for collecting stakeholder input and brief explanation.	
4. A Statement of how the input will be considered and brief explanation of what you learned from your stakeholders.	

**IV. Planned Program Table of Contents**

<b>No.</b>	<b>Critical Issues in order of appearance in Table V. Activities and Accomplishments</b>
1.	Agricultural Viability, Profitability, and Sustainability
2.	Biotechnology, Biomaterials, and Bioenergy
3.	Community Viability
4.	Food, Nutrition, and Health
5.	Natural Resources, Environment, and Climate Change
6.	Strengthening Virginia Families
7.	Youth Development

## V. Planned Program Activities and Accomplishments

Please provide information for activities that represent the best work of your institution(s). In your outcome or impact statement, please include the following elements (in any order): 1) the issue and its significance (e.g. who cares and why); 2) a brief description of key activities undertaken to achieve the goals and objectives; 3) changes in knowledge, behavior, or condition resulting from the project or program’s activities; 4) who benefited and how. Please weave supporting data into the narrative.

### 1. Agricultural Viability, Profitability, and Sustainability

Corresponding VCE Program Teams:

- Animal Production
- Agronomic Crops and Horticulture
- Agribusiness Management and Economics
- Emerging Pest and Pesticide Management

No.	Project or Program Title	Outcome/Impact Statement	Critical Issue Name or No.
1.	<b>Equipping Extension Educators in Aquaculture during COVID-19 Pandemic</b>	<b>Relevance:</b> The COVID-19 pandemic severely impacted aquaculture development. Sales and demand for aquaculture products were severely depressed due to the restrictions on restaurants being open for business. The inability to conduct traditional programming, training, and site visits with ANR Agents due to the Pandemic hindered technical assistance to established and potential aquaculture producers. ANR Agents were inundated with questions concerning aquaculture systems and other issues related to small impoundments. To facilitate the programming, communication and training of ANR Agents during COVID 19, it was decided that the best approach was to hold Zoom Q&A sessions on aquaculture, aquaponics, and farm pond issues.	Agricultural Viability, Profitability, and Sustainability

		<p><b>Response:</b> In response to COVID 19, weekly Q&amp;A virtual sessions on aquaculture, aquaponics, and farm pond issues were conducted targeting extension specialists and ANR Agents. Each week an email on various concerns and topics were sent out for discussion for these Q&amp;A sessions. During these sessions, a series of virtual programs on aquaculture and aquaponics were developed on: Solar power for small-scale aquaponics, food safety, marketing, and aquaculture production. Four virtual programs on Aquaculture for Rural and Urban Homesteading were designed to increase food security, self-reliance and business development for small-scale rural and urban farms and families. During virtual sessions, questions posted in the chat box were answered and all participants were asked to take a survey that was posted as a link in the chat box.</p> <p><b>Results:</b> A total of 19 Q&amp;A sessions were held in 2020 with 208 Extension Agents participating. These sessions were not only on programming but also facilitated training and educating the agents in aquaculture systems and pond issues. Many agents increased their knowledge on this subject by 50%. This resulted in developing 12 individual virtual trainings focused on aquaculture and aquaponics. As part of these programs, a series was developed on Aquaculture for Homesteading: Rural and Urban. A total of 109 participants learned how to develop aquaculture production systems for Food Security (Self-reliant) and as a potential enterprise. 20 percent of participants indicated they planned to start an aquaculture system for home use or as a business. If only 15% (16 participants) adopted an aquaponic system, they would conservatively harvest 100 pounds of fish per system. This results in a cost-savings of \$500.00 per system at \$5.00 per pound of whole fish or a combined total of \$8,000.00 for 16 participant-built aquaponic systems. Post-session participant surveys indicated that 95% of participants received the necessary educational</p>	
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		<p>information for developing an aquaculture system for home-use or farm business.</p>	
<p>2.</p>	<p><b>COVID-19 Pandemic Programming Pivot: Virginia State University Specialty Crop Education Delivery via Facebook Live!</b></p>	<p><b>Relevance:</b> Each year, hundreds of limited resource small family farmers look forward to attending in-person educational events held at the Virginia State University Randolph Research Farm in Petersburg, VA. During these hands-on field days, participants are able to see and ask VSU extension specialists questions as they introduce and demonstrate techniques on how to grow and manage specialty crops. Planned in-person educational events ceased on March 12, 2020 when Virginia was declared under a state of emergency due to the COVID-19 pandemic. Without the availability of in-person training, valued underserved farm audiences lacked the necessary educational programming to successfully adopt new farm enterprises, such as berry production.</p> <p><b>Response:</b> To continue providing the public with research-based information that keeps them safe, healthy and informed, Virginia State University Cooperative Extension adopted digital methods for effective public outreach. With expertise provided by the VSU Marketing and Communications department, Facebook Live was selected as the digital platform to conduct virtual educational field day programming. Facebook Live was an excellent choice for underserved audiences since it is accessible to anyone with a smartphone or a computer; participants do not need to have a Facebook account; the public can ask questions in real-time by typing them into the session; and the live program can be recorded, close-captioned and posted on the VSU Cooperative Extension website at: <a href="https://www.ext.vsu.edu/horticulture">https://www.ext.vsu.edu/horticulture</a> with additional resources on the subject.</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>

		<p><b>Results:</b> The VSU Annual Blueberry Field Walk was virtually delivered through Facebook Live on Thursday, March 26, 2020 at 4:00 pm. Over 2,000 participants virtually walked through VSU's Randolph Farm blueberry fields and high tunnel and learned about 39 different cultivars currently being studied. During the program, participants asked questions in real time. The new online format permitted VSU Extension faculty to reach global audiences, while practicing necessary social-distancing COVID-19 precautions. This was the first event of its kind conducted by Virginia Cooperative Extension and served as a replicable model of effective extension educational programming during COVID-19.</p>	
<p><b>3.</b></p>	<p><b>Preparing Virginia's Limited-Resource and Socially Disadvantaged Farm Families to Profit during the COVID-19 Pandemic</b></p>	<p><b>Relevance:</b> Due to ease of market entry, many small, limited-resource and socially disadvantaged farm families are heavily reliant on direct to consumer market outlets such as farmers markets, roadside stands and U-Pick sales. With the onset of COVID-19 social distancing restrictions, direct sale farmers need additional training and technical support to learn new skill sets to sell safely to customers through online sales, curbside delivery or other alternative sales methods.</p> <p><b>Response:</b> From the beginning of COVID-19 social distancing restrictions, the Virginia State University Small Farm Outreach Program (VSU-SFOP) continued to conduct COVID-safe educational programming providing technical service and virtual training events targeted to meet the business and marketing needs of Virginia's limited resource, socially disadvantaged small farm family businesses.</p> <p>During 2020, the VSU-SFOP agents and staff conducted the following educational outreach efforts:</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>



		<ul style="list-style-type: none"> <li>• Distribution of informational newsletter to 3,000 limited resource, socially disadvantaged, beginning and veteran farmers</li> <li>• Provided 591 direct technical support via phone calls, emails, socially distanced farm visits and virtual trainings</li> </ul> <p><b>Results:</b> As a result of conducting 591 direct technical support and outreach efforts, 1,860 limited resource, socially disadvantaged, beginning and veteran farmers received educational information and training to assist them to: 1) Learn how to accept credit card payments; 2) Explore web, email, Facebook, and telephone pre-order sales; 3) Implement new sales strategies such as curbside pick-up; 4) incorporate socially distancing restrictions for safe customer relations. Additionally, 237 farmers accessed various USDA programs and services; 312 farmers decided to develop a written business or marketing plan; 36 farmers diversified their operations; 41 farmers adopted cost-efficient production practices resulting in an estimated savings or farm increase of 10 percent or more during the COVID-19 pandemic.</p>	
4.	<p><b>Small, Limited Resource Sheep and Goat Ranchers shave off Parasite Treatment Costs by watching FAMACHA webinars during COVID-19 Pandemic</b></p>	<p><b>Relevance:</b> In Spring 2020, due to the Covid-19 pandemic, face to face parasite management and FAMACHA certification trainings across the state of Virginia and nationwide were cancelled leaving limited resource ranchers with pest management problems without needed training. The term FAMACHA stands for "FAffa MAlAn CHArt" which is a testing method that assists ranchers to determine parasite load in their sheep and goats. The FAMACHA method is a cost-effective pest management method for small and limited resource ranchers. Even though small ruminant production can be profitable, infections with worms impact the productivity of grazing animals significantly. There is an urgent need for these beginning producers to adapt sustainable integrated control</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>

		<p>strategies for parasite control to reduce reliance on chemical dewormers and prolong drug efficacy on farms. In addition, they need to be aware of current recommendations for effective parasite control on farms.</p> <p><b>Response:</b> In response to the need for pest management training during the COVID-19 pandemic, the Virginia State University Small Ruminant program collaborated with Fort Valley State University to develop and implement an online integrated parasite management and FAMACHA certification program for extension agents and producers in VA and GA. Two zoom trainings were conducted and recorded and participants were required to take an online quiz (passing grade of 70%) and submit a video of themselves conducting the FAMACHA eye score on a sheep, goat, llama or alpaca using the correct technique in order to receive a FAMACHA card and certificate in the mail.</p> <p><b>Results:</b> As a result of online trainings, 244 goat and sheep producers were virtually trained in integrated parasite management. 45 participants became FAMACHA certified. The recorded training, online quiz, certificate, and FAMACHA cards have been made available to extension agents in VA and GA. Economic savings were also realized by participating farmers. Participating producers raised either sheep (100) or goats (144), averaged 20 breeding females, 1 ram/buck, and 35 offspring/year for each farm. Assuming 50% (122/244) adopted use of the FAMACHA system and other performance indicators for targeted selective treatment (deworming at most 30% of flock/6 adults and 10 young 3 times/year) over deworming all animals (21 adults and 35 young 3 times/year); each sheep producer would now spend \$33 on deworming (assuming \$1/deworming for each adult and \$.50/deworming for each lamb) compared to \$115, while each goat producer would now spend \$66 on deworming (assuming</p>	
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		<p>\$2/deworming for each adult and \$1/deworming for each kid) compared to \$230. Therefore, the total saved as a result of this training is \$4,100 for sheep producers and \$11,808 for goat producers during the COVID-19 pandemic crisis.</p>	
<p>5.</p>	<p><b>Training small and limited resource farmers on low-technology online ordering method to improve potential profitability during the COVID-19 Pandemic</b></p>	<p><b>Relevance:</b> In Virginia, farmers’ markets are considered an essential retail business and were permitted to operate during the COVID-19 pandemic. Throughout Virginia, consumers in an effort to prevent the spread of COVID-19, have turned to online purchasing. Opening up a new marketing option for farmers’ market customers to pre-order from participating farmers who have set up an online ordering platform. This new online pre-ordering option has led to increased income for participating farmers in the order of three to five times more profit than previous COVID face to face farmers’ market sales events. Unfortunately, small and limited resource farmers who cannot afford cost-prohibitive online ordering platform software or do not have the human resources or confidence to manage a complex online ordering system have been shut-out from the potentially lucrative online ordering option to maintain and service a loyal or new customer base and in some cases, remain in business during the COVID-19 pandemic. Based on a needs assessment with the members of the Virginia Farmers Market Association, Virginia Cooperative Extension agriculture agents and Virginia State University Small Farm Outreach program staff it was determined that farmers’ markets managers, vendors and other small on-farm market operators would benefit from additional training on low technology options for taking customer online orders.</p> <p><b>Response:</b> In order to address the identified need for conducting educational training on low technology options for taking customer online orders during the COVID-19 pandemic, the Virginia State University</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>

		<p>Cooperative Extension developed online ordering training materials focused on using Google Forms to take customer orders and maintain a current product inventory spreadsheet to use for keeping track of sales orders in real time. In collaboration with the Virginia Farmers Market Association and Virginia State University Small Farm Outreach Program, an online workshop was developed that explained in detail how to set up an online ordering system using low-tech and low-cost options to increase sales during the COVID-19 pandemic. The workshop was targeted towards small, limited resource and socially disadvantaged farm businesses.</p> <p><b>Results:</b> As a result of the conduct of the online ordering workshop, 43 small, limited resource and socially disadvantaged farm businesses became aware of and learned how to set up an online pre-order system using Google Forms and other low-tech and low-cost options. The training workshop was made available on the Virginia State University Small Farm Outreach Program-Small Farm Resource Center website at: <a href="https://vasmallfarmers.com/farmers-market-success-during-covid-19-an-online-training-series/">https://vasmallfarmers.com/farmers-market-success-during-covid-19-an-online-training-series/</a></p>	
<p>6.</p>	<p><b>Developing Consumer-Targeted Edamame Varieties for the Mid-Atlantic Region to Expand Domestic Production and Availability</b></p>	<p><b>Relevance:</b> Vegetable protein sources are in high demand in the American diet. There is a growing demand for edamame, also known as vegetable soybeans, but most of that demand is met through imports of frozen products from Asian countries. Developing domestic edamame varieties can diversify specialty crops available for growers, provide fresh edamame to local markets, and reduce reliance on imported edamame products. Breeding of domestic edamame varieties can address the sustainability, quality, and nutritional expectations of American consumers and support American agriculture. The long-term goal is to increase competitiveness and consumption of domestically produced edamame products with</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>

		<p>improved sensory attributes and become the primary supplier in the U.S. and international markets.</p> <p><b>Response:</b> A research team composed of plant science breeders, agronomists, pathologists, weed scientists, entomologists, food scientists, and economists from Virginia Tech used a systems approach to identify new edamame varieties that grow well in Virginia and other Southern locations (Mississippi, Arkansas, Missouri). Edamame varieties were evaluated for plant pathogen resistance, insect damage, and edamame bean composition and consumer acceptability. Over 1000 edamame samples were processed. The generated data, including sensory and nutritional information, was used to guide the breeding groups to select elite varieties.</p> <p><b>Results:</b> Pests (soybean aphid, Mexican bean beetle, potato leafhopper, a complex of stinkbug species) are prevalent in edamame. Downy mildew and bacterial incidence have been noted. Significant differences are observed among genotypes. Compositional analyses and consumer acceptability of the edamame beans were influenced by location grown and variety. Researchers used consumer acceptability and identification of attributes, using a check-all-that-apply methodology, to create a decision tree for identifying advanced edamame lines that have best potential for meeting consumer sensory quality expectations. Salty and sweet taste notes in edamame are positive attributes for consumers. Consumers are not willing to pay as much for edamame with flavor notes of bitter, nutty, and grassy. To date, one domestic edamame variety has been released and is named 'Virginia Sweet'. This cultivar appears to be better than currently available edamame varieties for production in the mid-Atlantic region.</p>	
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7.	<p><b>Virtual Successes from the Extension Master Gardener State Office in 2020</b></p>	<p><b>Relevance:</b> The State Extension Master Gardener (EMG) Office is responsible for developing programming materials, resources, training materials, and assistance to Extension Master Gardeners and their supervising agents and coordinators throughout the Commonwealth. We serve the 61 units across Virginia and have more than 5,000 active volunteers who give of their time and talents every year as a member of the Extension Master Gardener Program.</p> <p><b>Response:</b> With virtual learning a necessity throughout 2020, the State Office had to rework how we provided services and programs to our Agents, Coordinators, and volunteers. Three highlights from this year included moving our in-person continuing education conference, Master Gardener College, to a virtual event, hosting a virtual leadership development series for EMGs, and building out an online template for our units to use as they train new volunteers.</p> <p><b>Results:</b> Virginia Extension Master Gardener College (MGC) 2020 was the largest event the State EMG Office has held. MGC brought in 1,200 people, 1,100 from Virginia and 100 from 17 other states. All of these learners had to learn how to run Zoom and how to log into and use the Virginia Tech Canvas system. Attendees were provided 4 days of keynote and concurrent sessions, totaling 10 hours of live sessions and 40 hours of recorded sessions available for them to view throughout 2020. We found</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>

		<p>that the virtual option allowed many volunteers an opportunity to join MGC for the first time. 64% of survey respondents were first-time MGC attendees. Many attended the sessions live. On average 785 people attended each keynote, and 752 attended breakout sessions during the week of the conference. One attendee stated, “It rocked! I was amazed at how smoothly everything went. I just can’t say enough good things about the experience in the midst of this difficult situation. When so much has been cancelled and taken away, it was wonderful to have something to look forward to and participate in.” Another shared that, “Having a virtual Master Gardener College has been a silver lining of COVID-19 for me.” Due to the overwhelming response and additional interest in MGC, we re-opened registration and had an additional 200 individuals register after-the-fact to access all of the recorded keynote and concurrent sessions.</p> <p>Our Virtual Leadership Development Series took place once a week throughout October. Topics were relevant to the current challenges all of our units are facing and were designed to have aspects of interaction and idea-sharing, something our EMGs were missing by not being able to travel or gather together due to pandemic restrictions. Sessions included Volunteer Engagement in a Virtual World, Coming Together for Racial Understanding Dialogue, Programming Pivots: New Program Development during the Pandemic, Creating Engaging Presentations, and People Problems: Managing Conflict Locally. One participant let us know that “I enjoy the Zoom capability for Leadership series. Thank you for another Master Gardener session that makes us proud to be involved!” Another reached out and said, “I wanted to thank you for putting together such a great leadership program during October. The presenters were well prepared and insightful. I have learned a lot and plan to implement many of the concepts and ideas. It was great being able to interact with other</p>	
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		<p>EMGs throughout the state.” Overall, we had 480 attendees over five sessions, for an average of 96 attendees per session. These numbers far exceeded past years’ participation when we held these in-person within each of our four districts. Even though we connected virtually, we were able to engage many more faculty, staff, and volunteers.</p> <p>Finally, nine EMG training classes, including many multi-unit joint training classes, have started to use an online system as a way to host their EMG trainings, hold resources and materials, distribute quizzes, and more. This has been a great resource to them as they navigate through virtual and hybrid training options as the pandemic continues. They are finding new ways to bring in and train volunteers and continue the EMG legacy in Virginia.</p>	
<p>8.</p>	<p><b>2020 - Eastern Shore Agents Educate Growers on Agriculture Profitability and Sustainability</b></p>	<p><b>Relevance:</b> Education is key to the success of the agriculture industry. On the Eastern Shore of Virginia, agriculture and forestry is the number one industry earning upwards of \$258 million per year. Each year, several Extension programs are offered to producers to enhance their knowledge of new technologies, upcoming regulation changes, and assistance programs being offered.</p> <p>One notable critical area where programming is necessary is Agricultural Best Management Practices (BMPs). BMPs are important to the Eastern Shore due to the amount of land used for agricultural purposes. According to the 2017 Agricultural Census produced by NASS, the Eastern Shore’s two counties, Accomack and Northampton, collectively have 40% of their land usage listed for agricultural purposes. Many of these agricultural activities can be the source of nutrient runoff, sediment, pathogen, and pesticide pollution to the Chesapeake Bay. Through educational programming, Extension agents strive to provide Eastern Shore producers</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>



		<p>all the tools needed to produce profitable crops while maintaining the health of the Chesapeake Bay through BMPs.</p> <p>Other critical areas where education is needed to increase agricultural productivity and sustainability include agricultural technology, farm safety, marketing of products, food safety, and regulations associated with agricultural production. Eastern Shore Extension Agents labor each year to create programming focused on these critical areas. Through education, producers can increase their profitability and sustainability on the farm.</p> <p><b>Response:</b> Each year, VCE in Accomack and Northampton Counties partner with VCE specialists, local agencies, and local businesses to offer the Eastern Shore Agricultural Conference and Trade Show. The Conference is a two-day event with break-out sessions focusing on profitability, marketing, pest management, and sustainability of our locally grown crops. The Conference reaches producers regionally and is an event known for its educational efforts.</p> <p>Three programs were conducted that allowed pesticide applicators to be re-certified on pesticide safety, legal issues, and integrated pest management (IPM). These programs were supported by faculty at the Eastern Shore AREC, Hampton Roads AREC, Virginia Turf Council, Agents, and VDACS Pesticide Investigators. The goal of these programs was to assist agricultural producers and licensed pesticide applicators to comply with the law and protect the environment and human health through the safe and efficient use of pesticides and alternative pest control tactics. Re-certification programming occurred on February 5th, March 1st, and online starting November 25th, 2020.</p> <p>Another goal of Accomack and Northampton Agents is to assist VCE Specialists to establish on-farm field trials. The relationships that agents form are crucial for the success of the specialists' research projects. In</p>	
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		<p>turn, the growers receive valuable, innovative information regarding their specific crop or farming operation.</p> <p>The Accomack and Northampton Pest Monitoring programs support the agricultural industry on the Eastern Shore. Agents provide pest management and applied-research information through newsletters, memos, newspaper articles, and electronic means in a timely manner. Pest information observed by agents in the field is provided to specialists. The specialist provide management and control recommendations. This information is then provided to the producers.</p> <p><b>Results:</b> The Annual Eastern Shore Ag Conference and Trade show is a two-day professional meeting supporting the agricultural industry and agribusinesses on the Eastern Shore of Virginia, Maryland, Delaware, Eastern Virginia, and North Carolina. In 2020, an average of 137 persons/day and 24,596 Eastern Shore acres were impacted by this event. The Conference was held on February 5th and 6th, 2020 and 56 agribusinesses took part in the trade show.</p> <p>The Private and Commercial Pesticide Recertification events offered on the Eastern Shore of Virginia re-certified a total of 88 pesticide applicators in 2020. Specifically, 19 Commercial Pesticide Applicators and 69 Private Pesticide Applicators were re-certified. All of these applicators were trained in pesticide safety, pesticide law, and IPM for private categories 90, and 91 plus commercial categories 1A, 3A, 3B, 6, 10, and 60.</p> <p>Agents worked with 10 Specialists to establish on-farm research projects that benefited both the growers and the Specialists' research.</p> <p>The Accomack and Northampton Pest Monitoring programs serves 400+ growers, specialists, service industry, agribusiness, and sales personnel. Periodic updates are provided via newsletters, emails, and memos. An email list consisting of over 125 producers is regularly used to provide</p>	
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		<p>immediate information on pest management issues. Evaluations by participants yielded positive responses to having hands-on agricultural experiences and participants agreed that they received an increased knowledge of agriculture in Accomack County.</p>	
<p>9.</p>	<p><b>2020 3rd Annual Women in Agriculture Gathering Connects Untapped Minority Farmer Audience and Paves Way for State Programming</b></p>	<p><b>Relevance:</b> The number of Virginia farms operated principally by women has increased by 115% from 2012 to 2017. Women make up 36% of all operators and 55% of farms have at least one female producer associated with the operation based on the 2017 Census of Agriculture. There is limited programming in Virginia for this minority group.</p> <p><b>Response:</b> For the past three years (2018-2020) the Women in Agriculture Gathering (WAG) aimed to provide networking opportunities and subject matter knowledge transfer. The targeted long-term outcomes of the conference series remain to improve each attendee’s connectedness to other women in agriculture, connectedness to resources in agriculture, understanding of their importance to industry, confidence in their ability to make a difference in the industry, and confidence and ability to succeed in industry. The 2020 event consisted of a focused session on farm transition with an estate attorney and VCE specialist, a keynote, and a series of breakout sessions. The breakout sessions covered topics ranging from farm stress management, insect ID, fresh produce food safety, cut flowers, flock management, funding programs, etc. in accordance with surveys and needs assessment following the 2019 event. The conference was advertised statewide via VCE agent listserv, newsletters, newspaper articles, and Facebook. It was purposefully targeted at beginner farmers, experienced farmers, and farmers interested in varied production methods and enterprises as a means to create a one-of-a-kind diverse learning and peer networking environment.</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>

		<p><b>Results:</b> Approximately 75 women from several regions across the state attended the event. To further the ongoing mission to meet the needs of this underserved audience, the Women in Agriculture Gathering offered a scholarship for 10 first-time registrants. A wrap-up activity at the end of the conference affirmed the relevance of the event when women completed the statements, “VCE Future of AG for women” and one individual responded, “this meeting helps so much by giving us the tools and info that is available to us as women.” Another statement women were asked to complete, “What does success look like for you in the Ag Industry?”, and responses included, “success would be for our farm to carry on to (the) next generation.” and “Helping the community to become knowledgeable of their health and changes they are able to make.”</p> <p>Overwhelmingly every year the participants look to gain networking opportunities with other women in agriculture at this event. To capitalize on this event’s success and impact on women in agriculture, a group of predominantly female ag agents have begun to collaborate and work on repeating the WAG event in four locations across the state in 2021. This should allow more women to attend these gatherings to network and not have distance be as much of a constraint.</p> <p>Additionally, this group of agents from around the state started work in late 2020 to capitalize on the importance of opportunities for female farmers to interact by creating the VA Women in Ag Network, a monthly Zoom meeting for women with a speaker and breakout sessions.</p> <p>Statewide women in agriculture programming has been added as an action plan for 2021 under the Agribusiness Management and Economics program team.</p>	
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<p>10.</p>	<p><b>2020 Farm Transition Work Across Virginia</b></p>	<p><b>Relevance:</b> Virginia’s productive farmland has decreased in acreage by 6% during a 5-year span from 2012 to 2017, almost 7.8 million acres. Forestry has a similar statistic with nearly 16,000 acres of the almost 10 million acres of private forestland lost each year. The average age of a Virginia farmer is 58.5 and nearly 91% of Virginia farmland acreage of operations are primarily owned by one producer’s household and/or extended family. Family farms and forests make up the majority of acreage across the state and with older generations holding the reins, management and assets transition of farms and forestland are an important area of focus to ensure this valuable foundation for food and fiber production remains viable for generations to come.</p> <p><b>Response:</b> In 2020, a number of in-person and virtual programs took place to cover the topic of farm and forestland transition. The 3rd annual Women in Agriculture Gathering conference held a one day in-person pre-conference session focused on farm transition in late February. The nationally recognized Generation NEXT program focused on forestland transition legacy planning moved to a virtual platform amidst the COVID-19 global pandemic. Various other in person and virtual programs focused on topics such as business and estate setup, planning, transition, tax tips, and gifting tips also took place. These programs drew on expertise from a variety of attorneys, accountants, and other industry professionals.</p> <p><b>Results:</b> Approximately 325 participants took part in farm transition programs in 2020 representing over 7,000 acres of land to be transferred. Survey respondents from Generation NEXT and the Women in Agriculture Gathering are 99% and 65.5% more prepared following these workshops respectively. Approximately 87.5% and 40% of survey respondents planned to take steps following the Women in Agriculture Gathering and</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>
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		<p>various other farm transition programs respectively. Follow-up survey respondents for the GenerationNEXT program show 80% have started to take steps in legacy planning. More work on the front of farm and forest transition and estate planning will be coming in 2021 and we look forward to the impacts they will make for our landowners and the commonwealth as a whole.</p>	
<p>11.</p>	<p><b>2020 Impact Statement— Virginia Household Water Quality Program (VAHWQP)</b></p>	<p><b>Relevance:</b> Nearly one-quarter (21%) of Virginia’s population (1.6 million people) rely on private water supply systems, such as wells, springs and cisterns, for their household water. In the US, municipal water supplies are regulated under the Safe Drinking Water Act by the Environmental Protection Agency, which mandates regular testing and water treatment. Homeowners who use private water supplies are completely responsible for routine testing, system maintenance, and addressing any water quality problems. Lack of knowledge about private water supply management and water quality issues may lead to system neglect and a lack of regular water testing, which can have serious implications for water quality, the longevity of the water supply system, and the health and safety of the families who rely on these systems.</p> <p><b>Response:</b> The Virginia Household Water Quality Program (VAHWQP) provides confidential water testing and educates private water supply users through county-based drinking water clinics. With Virginia Cooperative Extension agents, trained through the Virginia Well Owner Network (VWON), faculty in Biological Systems Engineering (BSE) coordinate clinics in at least 60 counties per year. At a clinic kickoff meeting, participants receive water sampling kits and instructions. A day later, participants bring their water samples to a central location in the county. The samples are transported to Virginia Tech for analysis. Samples</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>

		<p>are analyzed for 12 chemical constituents and for the presence of total coliform and E. coli bacteria. Four weeks later, test results, an explanation of individual results, and possible solutions to water problems, including water treatment options, are discussed with clinic participants at an interpretation meeting, a critical value-added component unique to VAHWQP drinking water clinics. With the onset of the COVID pandemic, our programs were postponed and our entire calendar of programs was compressed into four months beginning in August. We adjusted kit pick up and sample drop procedures off to allow for outdoor, physical distancing and required masks. Since in-person results meetings were not possible, we centralized returning results, and the coordinator emailed or mailed them to each participant. When possible, live (virtual) Zoom results meetings were held in cooperation with local Extension agents, but in many counties, a link to a recorded meeting was sent instead.</p> <p><b>Results:</b> Sixty-two (62) drinking water clinics were held serving participants from 62 counties in 2020. In 2020 (Aug-November), 2132 samples from private water supplies were tested. The sampled systems provide water for 4900 Virginians. Statewide, in 2020, about 40% of all samples did not meet the EPA standard for public systems for total coliform bacteria, 8% were positive for E. coli, and 8% of samples exceeded the recommended level for lead in water that had been stagnant in the plumbing system for at least six hours. Due to COVID restrictions in the spring and summer of 2020, VAHWQP offered a full year’s worth of drinking water clinics in just four months. This compressed schedule gave us the unprecedented opportunity to try several alternative program delivery approaches, and an opportunity to learn from our experiences. Four key lessons were learned. First, we were surprised by the high turnouts in many counties during COVID. Second, our typical schedule of several successive weeks of</p>	
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		<p>drinking water clinic sample collections followed by a break every 3-4 weeks is essential for our labs to maintain processing capacity so we can return sample analysis results to participants in a timely manner. Under our current operating model, our daily drinking water clinic sample collection capacity of 220 samples per day is only manageable with this regular break in program offerings. Third, emailing participant sample analysis results worked very well in some counties where most participants are comfortable with emails and attachments, but was not successful in counties with less internet connectivity or audiences less comfortable with emails and attachments. We are considering giving participants the option of selecting regular mail or email to receive sample analysis results in the future. Fourth and finally, the network of VAHWQP-trained Extension agents who coordinate local drinking water programs, deliver results at interpretation meetings, and field participant questions are essential to the success of VAHWQP. The VAHWQP Coordinator alone cannot easily handle the volume of inquiries and questions from participants. The VAHWQP model of training and using local Virginia Cooperative Extension agents to field run-of-the-mill questions, while referring more complex questions to the Coordinator is successful and sustainable. VAHWQP does provide outstanding value: if delivered commercially, the value attributed to the VAHWQP drinking water clinics offered in 2020 would be \$682,240. The cost to the 2020 participants was \$109,158 a cost savings of approximately 84%. Furthermore, grant funding was used to subsidize water testing for 162 participants. In 2020, about 9,500 unique visitors, 85% of which were new to the site, used VAHWQP's website, <a href="http://www.wellwater.bse.vt.edu">www.wellwater.bse.vt.edu</a>.</p>	
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<p>12.</p>	<p><b>2020 Madison County Community Food Project</b></p>	<p><b>Relevance:</b> In 2020, the COVID pandemic quickly changed the relevance of local food systems from farm profitability to food security. More households had to seek local food resources and/or grow some of their food to adequately feed their families. Food supply shortages caused by COVID quarantines imposed on workers processing and packaging food supplies ultimately broke the food supply chain and created food shortages at local grocery stores.</p> <p><b>Response:</b> Innovative marketing was a pandemic positive for the Madison County Farmers Market (MCFM). In 2019, MCFM used grant money to develop an online ordering platform to provide more convenience to the regular customer base. But that online ordering platform became the most significant 2020 strategy to market locally grown food under COVID restrictions and the only multi-producer market cooperative in the state to offer online ordering with curbside pick-up. The MFM operated for 32 weeks with online ordering with curbside pickup. To advertise the MFM online marketing, the market updated its website, Facebook, and rented a billboard on Main Street Madison to promote the market.</p> <p><b>Results:</b> The market served 1,878 customers that purchase over \$80,000 in local food, plus another \$80,000 in farm-direct sales generated by MFM promotions.</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>
<p>13.</p>	<p><b>2020 Spotted Lanternfly Outreach in Virginia</b></p>	<p><b>Relevance:</b> A very serious pest of agricultural crops, forest products, home landscapes, and general business commerce, the spotted lanternfly (SLF), <i>Lycorma delicatula</i>, was detected in Frederick County, Virginia, January 10, 2018. The initial infestation was determined to comprise about 1 square mile in Winchester City and Frederick County. At the end of 2020, the invasive insect species is now known to cover over 140 square miles across five counties. The spotted lanternfly is a fulgorid plant bug that has been</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>

		<p>expanding its range in Asia, and most recently North America. SLF feeds on more than 100 host plant species. Vineyards, orchards, and the forest industry are at risk. Excessive feeding on the vascular system of grapevines, fruit trees, and hardwoods reduces yield, quality, and can ultimately lead to plant death. Spotted lanternfly has the capability to aggregate in very high numbers on a single host tree. These high numbers of large insects can elicit fear and the use of many inappropriate chemicals and other management tools.</p> <p><b>Response:</b> Specialists and Agents spoke throughout the state, regionally, and nationally about the spotted lanternfly to raise awareness and to slow the spread of this invasive insect. 78 presentations have been delivered to a total of 2,756 individuals. Audiences included researchers, Extension Agents in Virginia and North Carolina, grower groups and farmers, civic groups, state and local elected officials, volunteers, state and local government workers, pesticide applicators, businessmen/businesswomen and employees, non-profit organizations, and the general public. Social media was used regularly to post updates and seasonal information related to the phenology of the pest, host species, geographic locations found, and timely best management information. Additionally, nine media interviews were conducted for radio, television, and newsprint.</p> <p>Due to COVID limitations, online training and five recorded modules were developed to ready willing volunteers for 2020, the third year of volunteer monitoring in Virginia (<a href="https://www.ento.vt.edu/idlab/SpottedLanternfly.html">https://www.ento.vt.edu/idlab/SpottedLanternfly.html</a>). Materials were distributed in person at an outside meeting that was held on July 22, 2020 for lead volunteers. Despite a late start to trapping due to the coronavirus pandemic, 1,356 unique observations were made by 46 detectors</p>	
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		<p>(Specialists, Agents, and volunteers) in 37 counties. Public reports also came from the public via social media, eXtension, email, phone, and in-person to the Insect ID Lab and through six VCE offices. Breeding spotted lanternfly infestations were found in the counties of Augusta, Clarke, Frederick, Shenandoah, and Warren as well as the City of Winchester. The remaining negative observations help serve to delimit the Virginia infestation.</p> <p><b>Results:</b> Community members are being reached and awareness is increasing regarding this invasive insect species. VCE-Northern-Shenandoah-Valley-Agriculture-and-Natural-Resources Facebook posts have reached more than 500,000 individuals regarding the spotted lanternfly in 2020. Over 1,600 SLF reports with requests for best management practices have been made to the Virginia Tech Insect ID Lab and Virginia Cooperative Extension-Frederick County. Residents reporting are often aware of the pest and over 98% of spotted lanternfly reports are correctly identified by the reporting individual. Reports and scouting led to one new county population discovery along with multiple transportation intercepts throughout the state.</p> <p>Following a SLF presentation, 98% of the audience comprised of 181 pesticide applicators (142 completing a post-program evaluation), stated they are now able to identify the spotted lanternfly and 94% will scout for and report SLF findings. The following comments were received from middle school youth following a presentation in Winchester: “I learned that lanternflies are an invasive species and they die off in winter but lay their eggs before winter and then the babies hatch in the spring”; “I learned they don’t bite, they are bad, they are colorful”; “I learned you should kill them and report them”; “I learned; 1. The types of trees lantern</p>	
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		<p>bugs don't go on, 2. Females bigger than males, 3. They are everywhere"; "I learned that their egg masses have 20-30 of those bugs. And that the male has a black thing on its bum and the female has a red thing on its bum. I also wanted to tell you that I have killed 30 bugs".</p>	
<p>14.</p>	<p><b>2020 VCE AG Today</b></p>	<p><b>Relevance:</b> When the COVID-19 pandemic shut down businesses in the spring of 2020, agricultural production, regarded as an essential industry, proceeded. Agriculture is the top industry or one of the top industries in most counties of East Central Virginia and according to the 2017 USDA Census of Agriculture, the market value of products sold in this seven county area is nearly \$188 million annually.</p> <p><b>Response:</b> Recognizing that agricultural producers still needed timely information to make informed management decisions especially in an unprecedented situation, the Agriculture and Natural Resources Extension Agents in Caroline/King George, Northumberland/Lancaster, Essex, Hanover and Westmoreland Counties developed a live weekly webinar series called VCE AG Today in April. Each week includes a thirty minute presentation from a guest speaker on a timely agricultural topic followed by questions and answers from the audience. To reach out to farmers and others who could not attend the live meeting, VCE AG Today is recorded, then posted on a YouTube Channel and Facebook. Additionally, a podcast-style version is available for listening on the go.</p> <p><b>Results:</b> VCE AG Today was delivered each week for thirty-seven weeks in 2020. Guest speakers participated from multiple state Extension programs, land-grant universities, state and federal government agencies, Farm Bureau, and area farms. In total, VCE AG Today reached 7,982</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>

		<p>people through the live webinar, Facebook recordings, YouTube channel and podcasts.</p> <p>An online survey was developed and promoted through all program distribution methods, both live and recorded. The majority of respondents participated in VCE AG Today live (97%); however, the majority of participants are viewing VCE AG Today as a recording (71%). Therefore, our evaluation results are a better indicator of the participants who watch or listen to the program live. Approximately, 33% of our live participants were farmers, 49% were Extension personnel and the remaining 18% were employees of other government agencies and agricultural industries. Seventy-five percent agreed that the information learned during VCE AG Today would improve their operation and all respondents found the information presented to be timely.</p>	
<p>15.</p>	<p><b>2020 VCE Agribusiness Management &amp; Economics Program Team response to COVID-19 pandemic</b></p>	<p><b>Relevance:</b> In March 2020, Virginia entered a state of emergency in response to COVID-19.</p> <p><b>Response:</b> Virginia Cooperative Extension made efforts to spread information about the economic impact of COVID-19 on the farm and agribusiness sector; and government relief programs available to farms and agribusinesses. The CLRFS program team actively reached out to farms and agribusinesses and shared their stories of adapting to the challenges of the pandemic.</p> <p><a href="https://foodsystems.centers.vt.edu/ResourcesandPartners/COVID-19intheFoodSystem.html">https://foodsystems.centers.vt.edu/ResourcesandPartners/COVID-19intheFoodSystem.html</a></p> <p><b>Results:</b> Faculty members in the Department of Agricultural and Applied Economics (AAEC) at VT have published several papers and resources on</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>

		<p>the impacts of COVID-19. They are available at the following website:  <a href="https://aaec.vt.edu/extension/resources.html">https://aaec.vt.edu/extension/resources.html</a></p> <p>Several faculty members from AAEC and two extension agents worked to develop a survey to measure the economic impacts of the pandemic for Virginia farms and agribusinesses. Preliminary results from the first round of the survey were presented at the 2020 Virginia Agribusiness Council (VAC) annual meeting; the second round of the survey will be rolled out in late January or early February 2021. Governor Northam was briefed on the results of the first round of the survey by Katie Frazier of Farm Credit East shortly after the VAC annual meeting.</p> <p>Specialists and agents made numerous presentations on the relief programs available and helped farm businesses apply for CFAP funds and funds from other programs.</p> <p>Our presentations reached approximately 2300 individuals. In addition, AME program team members shared information about COVID-19 or government relief programs with at least* 5900 individuals; directly helped at least* 117 individuals apply for government relief programs; and directly advised at least* 148 individuals on COVID-19 adaptation.          (*=Based on reports from 14 of the 65 team members.)</p>	
<p>16.</p>	<p><b>A New Online Workshop for Virginia Pesticide Safety Educators</b></p>	<p><b>Relevance:</b> Pesticide safety education is an integral part of Virginia’s agricultural, occupational, and public health efforts. Virginia’s economy depends on safe food, homes, and work environments. It also depends on a clean natural environment and protecting and managing our natural resources. Virginia Tech Pesticide Programs (VTPP) and the Virginia Department of Agricultural and Consumer Services - Office of Pesticide Services (VDACS-OPS) have provided pesticide safety education for over 30</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>

		<p>years in Virginia. These efforts have helped Virginians to safely produce a wide variety of agricultural products. Virginia Cooperative Extension is the arm that provides many pesticide safety education programs for private applicators and increasingly, commercial applicators. At the beginning of 2020, the Commonwealth of Virginia had about 5,000 private applicators and over 18,000 commercial applicators certified to apply restricted-use pesticides. The general public and many other growers who are not required to be certified also benefit from these pesticide safety education programs. Often when VCE agents are hired they have little direct experience in pesticide safety education. The materials and resources are available online but programming and teaching methods are difficult to learn without help from experienced agents. The resources and materials must be replenished and taught to new agents to provide the level of pesticide safety education required by the Virginia Pesticide Control Act. It has been difficult this year to provide the programming due to the inability of meeting in-person. In-person pesticide safety education training is one of the most valuable aspects of this type of education because we rely on demonstrations from research and extension. Applicators and extension agents have stated each year how important the hands-on lessons are.</p> <p><b>Response:</b> Virginia Tech Pesticide Programs (VTPP) and the Virginia Department of Agricultural and Consumer Services - Office of Pesticide Services (VDACS-OPS) has for many years, held the Virginia Pesticide Safety Educators Workshops for Agricultural and Natural Resource agents (ANR). This year, we held the workshop, but as an asynchronous online course. The purpose of the workshop is to provide agents with the necessary tools and resources on pesticide safety education to host pesticide applicator recertification courses in their counties. To make sure ANR agents are fully equipped to host recertification courses, VTPP provides agents with</p>	
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		<p>new/updated training media that relates to pesticide safety, legal issues, and pest management and application technology. This media is also made available to agents after the workshop in a separate online course. We work with VDACS and VCE specialists to provide the most relevant and up-to-date information during the workshop. Agents can also re-certify in Category 10, Demonstration and Research, which is the required pesticide applicator license in their line of work. When possible, we supply agents with hands-on teaching tools like personal protective equipment (PPE), different types of handbooks, chemical spill kits, etc.</p> <p><b>Results:</b> During the 2020 Virginia Pesticide Safety Educators Workshop (PSEW) we had a total of 91 participants. Of those 91 participants, 79 were agents and 68 completed recertification requirements for their Category 10 pesticide license. Participants were asked to complete a course evaluation, which received 71 total responses. Of those respondents, 62% rated the overall workshop as "Excellent" and 38% rated the overall workshop as "Good". Course participants were asked to provide open-ended feedback about the workshop. In terms of whether or not the content was helpful, participants were highly complimentary of the legal update, updates from specialists, and new IPM resources, as well as the ability to move through the course at their own pace. When asked "What is the most important thing you will take away from this workshop?", participants indicated the information about recertification options was at the top of their list. They also indicated by attending PSEW virtually, they could envision how they might transition their recertification courses to an online experience.</p>	
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<p>17.</p>	<p><b>2020 - Communicating and Program Development for Aquaculture and Other Related Issues with ANR Agents during COVID 19</b></p>	<p><b>Relevance:</b> COVID19 severely impacted aquaculture development. Sales and demand for aquaculture products were severely depressed due to the restrictions on restaurants. The inability to conduct traditional programming, training, and site visits with ANR Agents due to the Pandemic hindered technical assistance to established and potential aquaculture producers. Agents were inundated with questions concerning aquaculture systems and other issues related to small impoundments. To facilitate the programming, communication, and training of ANR Agents during COVID 19, it was decided that the best approach was to hold Zoom Q&amp;A sessions on aquaculture, aquaponics, and farm pond issues.</p> <p><b>Response:</b> In response to COVID 19, weekly Q&amp;A Zoom sessions on aquaculture, aquaponics, and farm pond issues were arranged for specialists and ANR Agents. Each week an email on various concerns and topics was sent out for discussion for the Q&amp;A sessions. Our conversions on future programs revolved around incorporating videos, Facebook Live, and other virtual platforms. During the sessions, a series of Zoom programs dealing with aquaculture and aquaponics was developed. Twelve programs were developed in solar power for small-scale aquaponics, food safety, marketing, and other aquaculture production aspects. A complete series of four Zoom programs were developed for Aquaculture for Homesteading: Rural and Urban. This program on aquaculture was designed to increase food security, self-reliance and develop a potential enterprise for small-scale rural and urban farms and families. During all Zoom sessions, the Chat Room was monitored for questions. All participants were asked to take a survey that was posted as a link in the Chat Room.</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>
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		<p><b>Results:</b> A total of 19 Q&amp;A sessions were held from May to October. The Q&amp;A Sessions were held weekly but went biweekly in September and October. A total of 208 ANR Agents participated in these sessions. These sessions were not only on programming but also facilitated training and educating the agents in aquaculture systems and pond issues. Many agents increased their knowledge on this subject by 50%. This resulted in developing 12 individual Zoom programs focusing on various aspects of aquaculture and aquaponics. As part of these programs, a series was developed on Aquaculture for Homesteading: Rural and Urban. A total of 109 participants learned how to develop aquaculture production systems for food security and a potential enterprise. Many (~20%) indicated in the Chat Box that they learned how to develop an aquaculture operation for their use or viable business. If only 15% adopted a production system, aquaponics or fish cages, this would modestly yield about 100 lbs. fish per system. This results in a saving of \$500 per system in food cost (at \$5 per lb of whole fish) or \$8000 for 16 systems. Overall, 95% of participants indicated that they received the necessary information for doing aquaculture systems.</p> <p>One of the issues involving Zoom is internet access in rural areas. Not everyone could see presentations, but they could use their phones to listen to the talks. They would later request video links and the presentation in PDF form. All Zoom programs were recorded to reach a wider audience and are currently being closed caption for web-based use.</p> <p><b>Public Value Statement:</b> In response to COVID 19 effects on the aquaculture industry, the Virginia State University Aquaculture program initiated weekly Q&amp;A Sessions to assist ANR Agents on programming needs in aquaculture, aquaponics, and farm pond issues. The result was 12 zoom</p>	
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		<p>programs reaching 215 individuals on aquaculture systems. The Q&amp;A sessions reached 208 ANR agents, which increased their ability to provide technical training and assistance to individuals doing aquaculture systems. The Zoom series on “Aquaculture for Homesteading” resulted in potential savings on food costs of \$8000. The recorded and closed caption Zoom programs will reach a wider audience.</p>	
<p><b>18.</b></p>	<p><b>Reducing Human and Financial Risk for Beginning, Military Veteran, and Historically Underserved Farmers through Farm Stress, Wellness, and Safety Education</b></p>	<p>The curriculum design team, consisting of 15 individuals from Virginia, North Carolina, and Tennessee were tasked with compiling existing material that can be used in the Farm Safety, Health, and Wellness curriculum and toolkit, as well as creating new material.</p> <p>Since the start of this project, we have identified a farm stress curriculum through Michigan State University that two team members have already received training in. Those individuals led two types of farm trainings targeting farmers and the service provider community: “Communicating with Farmers Under Stress” and “Weathering the Storm: How to Cultivate a Productive Mindset.” Three more members are currently being trained in this curriculum to increase our implementation footprint for 2020 through the online Mental health first aid trainings led by Michigan State University's Extension program. Due to COVID-19, we have been unable to hold additional in-person trainings. However, two team members created an online training recording for Extension Agents based on the farm stress curriculum. The farm safety piece was modified due to COVID-19. In addition to farm safety webinars, the core farm safety resource included a comprehensive farm emergency plan publication. The farm safety emergency planning kit is complete and has been published. This resource is titled the ‘Virginia Farm Emergency Plan’ and includes a template for farmers to fill out as well as instructions and recommendations for its use.</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>

		<p>The creator of the plan has also developed a Zoom recording that walks through the template and enumerates the advantages of creating such a plan. The Zoom recording is available on the AgrAbility and Virginia Beginning Farmer and Rancher Coalition (VBFRC) websites and was promoted via social media. The farm safety with youth training materials are complete, but we are awaiting approval from colleagues at VCE and Purdue University for implementation. COVID-19 has impacted the timeline for this approval. The farm financial health solutions subgroup has created a farm stress assessment checklist, detailing key farm stress identifier questions and communication strategies for talking with farmers experiencing stress and has published the document through Virginia Cooperative Extension. The group has also created two resources on farm financial stress management and best practices for managing farm financial wellbeing. The group offered webinars on both the assessment for extension agents and the entire toolkit for the public in September. In summary, our team has created a toolkit with the following publications: 'Best Practices to Managing Farm Financial Health and Wellbeing,' 'Managing Farm Financial Stress for a Healthy Farm and a Healthy Farm Family,' 'Farm Financial Stress Assessment Tool for Farmer Advisors and Practitioners,' 'Farm Safety, Health and Wellness Resource: Decision-Making Guide for Farm Service Providers and Educators,' 'Farm Stress and Grief in the Time of COVID-19: Strategies and Resources,' 'Virginia Farm Emergency Plan,' as well as five fictional mental health case studies for farmers and service providers to reference. A compendium toolkit that includes all of these resources has also been submitted through Virginia Cooperative Extension.</p> <p>We continued to host webinars related to farm safety, health, and wellness. Webinars included: 'Adding Value to your Harvest for Year Round</p>	
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		<p>Income’, ‘Collaborative and Cooperative Thinking for Farm Resilience’, ‘Using the Farm Financial Stress Assessment Tool: A Webinar for Extension Agents’, ‘Spotlight on Farm Safety, Health, and Wellness Toolkit for Managing Farm Stress and Mental Health’, and ‘Mindfulness and Self-Care for Farmers’. These webinars, along with our publications, our online trainings, and our farm dinner theatre models further comprise our Farm Safety, Health, &amp; Wellness Toolkit. Team members were unable to attend outreach events during this reporting period due to COVID-19. The AgrAbility Virginia program, a key partner of this project, however, overhauled their website in June and, in doing so, created a new outreach platform for our project by cross posting and promoting all of the resources developed by our project on their new site. This has significantly amplified our project's outreach potential. This website was further adapted to include a page devoted to the Farm Safety, Health, and Wellness Toolkit. Infographics were created for each resource and each will be promoted via AgrAbility’s social media accounts. Webpage link: <a href="https://agrability.alce.vt.edu/publications/SafetyHealthWellness.html">https://agrability.alce.vt.edu/publications/SafetyHealthWellness.html</a></p> <p>Project team members continued to build partnerships and collaborate with other parties doing work in the areas of farm safety, health, and wellness. These collaborative efforts and partnerships have been essential in the development of toolkit resources, offering programmatic opportunities, and continuing work past the end of this grant period. For example: a) AgrAbility Virginia, a federally-funded statewide program designed to assist farmers experiencing disability, illness, or injury, will formally carry on the work of the initiative by holding continuing trainings and releasing publications on related farm safety, health, and wellness themes in partnership with the VBFRC and others. b) A team of human</p>	
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		<p>development specialists have been targeting behavioral health, including opioid issues, substance misuse, and stress-related issues. As a part of this work, the team is working to build capacity within the Virginia Cooperative Extension system and at the community level around stress-related issues and substance misuse. This includes offering mental health first aid training to those working in the Virginia Cooperative Extension system. In addition to the mental health first aid training, this team is developing a farm stress and emergency business card. This work will continue beyond the close of the grant with AgrAbility. c) The statewide (Virginia) farm stress task is working to address farm stress, suicide, and opioid addiction. This effort aims to raise awareness about these issues and coordinate mental health resources with a farmer stress hotline. This work will continue beyond the close of the grant. We have worked to improve the availability of resources and information on the farm safety, health, and wellness webpage. This webpage is a place for information on online curriculum through outside agencies, as well as the future holding place for this team's toolkit materials. Webpage link:  <a href="https://www.vabeginningfarmer.alce.vt.edu/resources/safety-health-wellness.html">https://www.vabeginningfarmer.alce.vt.edu/resources/safety-health-wellness.html</a></p> <p>Our project was impacted by the COVID-19 pandemic in that we were unable to hold events at the VBFRC annual meeting and the Veteran Farmers Conference. Similarly, our in-person outreach was limited in 2020 due to the pandemic. To counter these limitations, we presented additional webinars and built out the AgrAbility and VBFRC websites with Farm Safety, Health, and Wellness Initiative content.</p>	
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<p>19.</p>	<p><b>Building and Strengthening a Long-term, Sustainable Farm to School System in Virginia</b></p>	<p><b>Relevance:</b> According to the Food Research &amp; Action Center (2018), Virginia’s child poverty rate is 13.7%, equating to 252,475 children under the age of 18 living in poverty. Additionally, 10.1% of Virginia households are food insecure and 13.7% of households struggle against food hardship. Many of these children rely on school meal programs for much of their food. Among all students in Virginia, 46% are eligible for free and reduced priced meals. There are approximately 241,056 students in schools who receive meals at no charge due to schools’ participation in the Community Eligibility Provision. USDA’s Farm to School (F2S) Census shows approximately half of Virginia’s school divisions participate in some type of F2S activity, with another 23% of divisions reporting an interest in starting F2S efforts.</p> <p>Virginia’s geography and regional agriculture systems provide unique opportunities and challenges to provide fresh, seasonal foods as part of school meals. Virginia spans about 40,000 square miles with locations in the state eight hours apart. Therefore, F2S is purposefully diverse and locally- and regionally-motivated. School districts with successful F2S efforts typically have a champion to help lead the initiative and a school nutrition program director who prioritizes the program. Community engagement with farmers, Virginia Cooperative Extension agents, Virginia Tech researchers, and Virginia State University Small Farm Outreach Program agents, local government officials, Virginia Farm Bureau representatives, distributors, parent and community volunteers, health and wellness organizations, and other community resources help ensure success and sustainability.</p> <p>Over the last several years, VCE has been involved in diverse F2S efforts. VCE is well positioned to be the partner of choice for providing research-based programming aimed at the three primary elements of F2S: procurement, school gardens, and educational activities in agriculture,</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>
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		<p>food, health, and nutrition. Given the increasing momentum of the Virginia F2S movement, developing a statewide strategy for VCE F2S efforts is critical, and should foster interdisciplinary collaborations, and close alignment with broader key F2S stakeholder goals.</p> <p><b>Response:</b> Building upon previous F2S collaborative efforts in VCE, including F2S survey work in 2010 and 2018, as well as the launching of regional network meetings in 2017 with the VA Department of Education (VDOE), and the subsequent 2018 Virginia F2S Conference, a VCE F2S Working Group was formed. The working group met informally, developed logic models, and began to catalog existing VCE efforts statewide through a series of survey questionnaires. At the same time, two of the co-leaders of the group worked closely with VDOE in November to develop a collaborative grant proposal of which VT is a primary partner institution. The grant proposal, “Building and Strengthening a Long-term, Sustainable Farm to School System in Virginia”, \$99,987, was submitted and received funding in late summer 2020.</p> <p>Concurrently, the working group submitted a formal proposal to become a VCE program team, which was approved in September 2020. The VCE Farm to School Program Team (F2S PT) has two main focal points: Institutional Capacity Building and Community Outreach Programming. The 26-member team represents all the primary program areas of FCS, 4-H, ANR, and CV, and recognizes overlap in other VCE program teams, thus works to foster inter-team collaboration and linkages, and to provide leadership, guidance, and support for agents and specialists delivering F2S programming. The F2S PT is working closely with primary stakeholders from the F2S State Leadership Team, to make sure our external programming efforts closely align with the state F2S strategic plan and plan of work (part of a USDA F2S grant, 2020-2022). VCE specialists and agents serve on the statewide team.</p>	
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		<p><b>Results:</b> The complementarity between the VCE F2S Program Team and the State Leadership Team is very strategic and provides for greater alignment of efforts. The development of a statewide F2S strategic plan sets the stage for goals to be achieved over the next 5 years and delineates a plan of work with specific action items and key persons responsible. At the same time, aligning our internal capacity building within VCE and educational programming &amp; outreach efforts with this broader statewide plan means Virginia F2S efforts can make many strides and minimize duplicative work. It also means we can continue to leverage our strong partnerships to work as a team and to secure additional funding sources. The future holds much promise for accomplishing our many goals.</p>	
<p>20.</p>	<p><b>2020 Hokie BugFest Proceeds as Virtual Event for 10th Anniversary</b></p>	<p><b>Relevance:</b> Every year the Entomology Department at Virginia Tech hosts Hokie BugFest, a science literacy event that promotes understanding and appreciation of insects and other arthropods to the public. This in-person event began in 2011 and grew to accommodate over 10,000 attendees in 2019. Youth, teachers, and parents seek entomological opportunities to fulfill family learning experiences, SOL requirements, and STEAM (science, technology, engineering, art, and math) enrichment. Hokie BugFest offers an array of educational experiences to meet those needs, which includes entomological research displays, arts and crafts, live specimens, curated insect displays, special events and activities, etc. In recent years, Hokie BugFest has expanded to offer a SAFE (supporting autism friendly environments) hour, which has been well received by families and individuals with special needs. This SAFE hour provides a welcoming, calm environment where families and individuals with special needs may enjoy the exhibits without the worry of crowds. Hokie BugFest also has the potential to recruit future students into science disciplines, which is vital to the health of the University and the Entomology Department. To fulfill</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>

		<p>those needs, this annual open house promotes entomology and science and invites all in the community to learn about insects and other arthropods.</p> <p><b>Response:</b> The Virginia Tech Department of Entomology, its alumni, friends, and donors have collaborated to organize, promote, and host the annual Hokie BugFest for the past ten years. This collaboration involves a year of planning and effort. Hokie BugFest is supported by institutional funds, donors from pest control and pest management industries, Virginia Cooperative Extension, Downtown Blacksburg Inc., and other local and regional organizations and businesses. The event has gained popularity within the College of Agriculture and Life Sciences, the University, and Virginia Cooperative Extension, garnering further participation from other departments and personnel. This collaborative effort has allowed Hokie BugFest to offer an array of educational activities that promote Entomology, science literacy, and STEAM enrichment.</p> <p>In light of the COVID-19 pandemic, event coordinators were faced with a difficult decision of how to move forward with the 2020 Hokie BugFest. The options were limited but obvious: the event could be cancelled or the event could move forward in a virtual format. Event coordinators chose the latter and the first ever Virtual Hokie BugFest arose for the 10th anniversary.</p> <p><b>Results:</b> The 2020 Virtual Hokie BugFest was built on the Entomology Department website featuring an assortment of videos, photos, and at-home activities. In honor of the 10th anniversary of Hokie BugFest, the event spanned 10 days (October 7 – 17), releasing new content on a daily basis. Special events included the Buggy Art Contest (152 total entries), Blattaria 1000 – Cockroach Races, Brandon’s Magnificent Flea Circus, the Weather Wise Guy (Bugs &amp; Weather), and Tony’s Creepy Crawly Zoo.</p>	
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<p>21.</p>	<p><b>2020 Supporting local and regional food businesses to strengthen local, regional and Commonwealth economies.</b></p>	<p>The primary goal of the Food Innovations Program is to provide the assistance needed for Virginia’s food processing industry to produce high-quality, safe, and innovative food products. During 2020, The Food Innovations Program remained open and continued to serve food entrepreneurs across the state. Food companies in the response to the COVID epidemic added new products or changed their business models augmenting those products already offered – for instance restaurants increased their production of packaged foods to increase take-out food potential.</p> <p>During 2020, we also saw an influx of out-of-state producers as well as an increase in the number of in-state producers. Since the death of the person at the helm of the WVU food testing program, the West Virginia</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>

		<p>Department of Agriculture has recommended food producers contact our program. Because of this recommendation, we completed at least 15 projects for West Virginia food producers last year. We strive to increase the awareness of all food producers to matters of food safety, pertinent food regulations, and general concerns associated with starting a food business.</p> <p>To accomplish this goal, efforts were focused on building a large base of educational material (both written and web-based) as well as building a large and encompassing support network through training and support of VCE Agents programming and fostering partnerships with state and federal regulatory and business agencies. One of the main missions of the program is to support the start-up and growth of food entrepreneur ventures within the Commonwealth. An important aspect of the program is to provide analysis for food processors and then discuss the results, implications, and recommended improvements so that the processors produce safe and wholesome food and maintain a viable business. In 2020, the Food Innovations Program provided online webinars and support to companies after the Virginia Department of Agriculture and Consumer Services adoption of the Code of Federal Regulations 21 Part 117 - Current Good Manufacturing Practice, Hazard Analysis, And Risk-based Preventive Controls for Human Food. This adoption added requirements for small and very small food businesses (including home-based operations). The Food Innovations Program provided webinars and online support for compliance.</p> <p>Introductory material reached initially 286 businesses.</p> <p>The program provides the expertise of a food processing authority who can provide evaluation and documentation needed by acidified food producers for state and federal regulatory compliance. The program also provides nutritional label calculation services. Although not always</p>	
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		<p>required by regulation, a nutritional facts panel is something that the consumer has come to expect on a food product label. Nutritional labeling can be quite expensive. Providing the calculation service to food processors at a feasible cost allows the processor to be competitive in the market. The Food Innovations Program is also able to provide valuable education on labeling requirements in the changing environment of food regulation. Finally, the program's other main mission is to function as a liaison between the food industry as a whole and the department to develop collaborations that benefit research development and food industry innovation.</p> <p>When comparing 2020 to 2019, the total number of people assisted and total products tested has increased by 54.8% and 14.5%, respectively. Businesses assisted include established companies, co-packers, growing specialty food businesses, and start-ups with a larger percentage of assistance going to start-up businesses this year. Many of our producers cited job loss or work reductions due to coronavirus as a catalyst for their interest in home-based food businesses. Assistance included information on business start-up, product food safety, development of food safety plans, cleaning procedures, environmental sampling, product stability, and shelf life as well as regulatory compliance. This year focused on increasing program reach. In conjunction with Extension Agents across the Commonwealth, the Food Innovations Program presented fifteen workshops that trained food entrepreneurs on starting food businesses, food safety, food processing, food quality, and food regulation. In conjunction with the network of agents, over 400 individuals were assisted. This translated to 192 businesses submitting 472 food products to be analyzed so that the food products could fall under regulatory inspection and enter commerce as new product launches. Of these products, 156 products needed reformulation changes (assistance provided by the Food Innovations Program) for safety prior to entry into</p>	
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		<p>commerce. Product reformulations for safety allowed the products to enter commerce and reduced the risk of the product causing illness, and consequently loss of business revenue that usually follows. In addition, nutritional facts labeling for 161 products were generated. Although nutritional labeling is not required in most instances for small start-up businesses, it provides a marketing benefit as most consumers expect nutritional information to be provided.</p> <p>The addition of an Assistant Director to the program during 2019 has enhanced the program’s ability to field more phone calls and emails regarding requests for information. Those numbers are not factored into the numbers reported above. During a rate review of the cost-recovery balance of the program, the program was allowed to create an hourly evaluation rate. This has allowed for assistance that falls outside of the previously-provided services. The program has used this rate to perform services such as label and ingredient statement review as standalone items, which previously had been performed at no cost because there was no mechanism to invoice for any “consulting” time.</p>	
<p>22.</p>	<p><b>2020 VCE Programming Enhances a Stronger Fresh Produce Food Safety Culture in Virginia</b></p>	<p><b>Relevance:</b> Despite efforts nationwide to reduce foodborne outbreaks, illnesses related to the consumption of contaminated fresh produce continue to occur. This past year, there were outbreaks associated with Romaine lettuce, packaged salad kits, and cut fruit mixes, spanning 33 states, with 314 cases, and 127 hospitalizations. Between 2009 and 2013, the state of Virginia averaged 302 cases of foodborne illness per year. For each confirmed case, there were an estimated 20-38 unconfirmed cases; thus, many more Virginians are affected by a foodborne illness than reported numbers. The estimated economic loss from foodborne illness in Virginia is between 9.8 and 18.7 million dollars per year.</p> <p>The Food Safety Modernization Act (FSMA) is comprised of seven rules that aim to change the food safety system in America from reaction- to</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>

		<p>prevention-based. One of those rules, the Produce Safety Rule (PSR), is the first to regulate the produce industry (e.g., activities around growing, packing, holding, shipping, etc.). Before the PSR, growers obtained voluntary Good Agricultural Practices (GAPs) audits to demonstrate they were achieving specific food safety standards. Often growers selling to larger or widely distributed buyer channels and institutions are required to obtain a GAP certification audit, now must also comply with FSMA’s PSR. To comply, produce growers must receive specific training authorized by the PSR. In contrast, growers selling through direct market channels are not required to obtain certification, unless a buyer requests it.</p> <p>Regardless of the market outlet requirements and the size of the farm, access to food safety education is crucial. Training and resources must be up-to-date, relevant to stakeholder audiences, and research-based. Ultimately, stakeholder access to the needed trainings and resources will lead to the adoption and implementation of best practices that reduce microbial risks and strengthen a prevention-based food safety culture in Virginia. The goal is that Virginia-grown produce will be safer (i.e., linked to fewer foodborne outbreaks and recalls).</p> <p><b>Response:</b> Depending on the marketplace buyer requirements for the produce stakeholder, our training approach has been tailored to meet specific marketplace and regulatory requirements since 2014. Many of these efforts have been supported by grant funding.</p> <ul style="list-style-type: none"> <li>• “Enhancing the Safety of Locally Grown Produce” and similar workshops targeting farmer’s market growers were delivered at 25 venues, reaching over 439 produce growers and market managers. Additionally, at other workshops, 693 people were trained in navigating food safety requirements and certifications, including market sector training and handling requirements to satisfy F2S and other specific buyer policies. Further, webinars and workshops on market access reached over 160</li> </ul>	
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		<p>people. Despite challenges in 2020 due to COVID-19, there will be trainings in 2021 to build capacity with a new cadre of agent trainers.</p> <ul style="list-style-type: none"> <li>• Fifty-two agents worked closely with specialists to conduct introductory and advanced level agent/ grower trainings statewide to increase agent capacity and the number of growers implementing on-farm and marketplace food safety principles, GAP, and/or safely operating produce packing facilities (total 770). Additionally, 41 agents and 103 growers were mentored in the Good Agricultural Practices (GAP) certification process, with 38 growers passing their third-party audits (a 100% success rate), thereby opening new market channels. To facilitate this work, we developed USDA HGAP and HGAP Plus manual templates and guides to support growers and agents. Additionally, a Tobacco Commission grant (2018) and a USDA Specialty Block grant (2020) were obtained to provide grower training, cost-share dollars, and resources for GAP certification.</li> <li>• Thirty-six presentations were delivered to 806 growers, 22 extension agents, and 45 state/county/city officials to raise awareness about the FSMA Produce Safety Rule (PSR). Twenty-four agents and specialists, and 10 VDACS Produce Safety Program personnel have attended a Produce Safety Alliance (PSA) train-the-trainer workshop allowing them to assist in PSA Grower Training courses; additionally, two specialists and one extension associate, became lead trainers allowing them to host/lead PSA Grower Training courses in Virginia and elsewhere. One of the specialist is also a “Trainer of Trainers” (TOTs) for the PSA curriculum (only approximately 15-20 TOTs in the US). TOTs can host PSA Train the Trainer classes and continue to build internal (Virginia) and external (regionally and nationally) trainer capacity.</li> <li>• Efforts to train Virginia produce stakeholders in the PSA curriculum (which serves as the only FDA-approved course to satisfy FSMA PSR training requirements under the regulation) have resulted in 750 Virginia</li> </ul>	
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		<p>produce stakeholders trained. Twenty-six (26) PSA Grower Training courses were hosted across the commonwealth of Virginia (in 20 different VA cities and 1 online course). One PSA Train the Trainer course was also held in Virginia (yielding 28 new PSA trainers). Additionally, three PSA virtual trainings are scheduled for 2021. VCE has also partnered with VDACS to assist VDACS’s Produce Safety Staff including inspectors and managers in FSMA PSR education, training, and outreach in Virginia. In 2018, several “educational tours” for VDACS, VCE, and FDA were conducted to visit Virginia growers and packers, allowing all parties to interact on an informal basis and learn from each other about navigating FSMA enforcement and compliance. Furthermore, we hosted an On-Farm Readiness Reviews (OFRR) Train the Trainer workshop in Virginia Beach in August 2019. We have 14 specialists and agents who are trained to assist VDACS during OFRR, with 50 OFRRs performed since 2018. OFRRs are a joint program between extension and state government to assist produce stakeholders in assessing FSMA PSR compliance (the program includes a farm walk-thru and conversation on food safety practices).</p> <ul style="list-style-type: none"> <li>• Additionally, a pilot water testing project was completed in 2019 that provided education and cost share for required production water testing. 11 agents were trained in PSR water sampling, in which they recruited 47 growers and trained them in water sampling methods, with 561 samples analyzed. All growers received an individualized grower report detailing the water quality of their water sources.</li> <li>• In addition to trainings, a comprehensive Virginia produce food safety website (<a href="https://ps.spes.vt.edu">https://ps.spes.vt.edu</a>), housing a wealth of guidance and resources for agents, growers, and consumers, was launched in late 2018, thereby providing a greater reach of our efforts. Since its launch, there have been 14,564 web-page views from the US and 106 other countries,</li> </ul>	
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		<p>providing vital resources for trainers and clients to navigate food safety issues.</p> <p><b>Results</b></p> <ul style="list-style-type: none"> <li>• Participants were evaluated for the trainings and mentoring to determine the knowledge gained and intended behavior changes of participants. Many participants said they had benefitted from the hands-on workshops, and their knowledge had increased in terms of identifying on-farm risks, implementing GAPs, and documenting food safety procedures. They also said they intended to incorporate the following practices to reduce contamination risks: (i) Providing more food safety training for workers; (ii) Testing quality of water used for irrigation; (iii) Improving handwashing and toilet facilities for workers; (iv) Improving cleaning and sanitizing methods on the farm or packing house; (v) Incorporating ways to control/monitor animals on the farm/packing/storage areas; (vi) Using safe methods (temperature control, sanitation, etc.) for storage and transport of product to marketplace; and (vii) Documenting food safety practices.</li> <li>• In addition to learning to assess risks, implement GAPs into their operations, and document practices, growers working towards or obtaining a third-party GAP audit were able to tap into or expand their market access. With the HGAP and HGAP Plus manual templates, there was a 100% pass rate for growers. The templates are also being used as part of the grant projects previously mentioned and available via the website.</li> <li>• Growers who took the FSMA PSR Grower Trainings completed a pre- and post-test to determine changes in knowledge and understanding. As a result of the trainings, scores on the post-tests increased by 5 points (average pre-test score 18/25, average post-test score 23/25) indicating</li> </ul>	
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		<p>stakeholders attending the class increased their knowledge on the FSMA PSR (n=728 complete pre- and post-test responses).</p> <ul style="list-style-type: none"> <li>• The 47 participant farms in the water testing pilot program saved a total of \$5,610 in water analysis costs, as well as an estimated \$4,500 in travel and/or mailing costs provided through agent coordination of sample collection and handling to the four laboratories. All farms received a unique individualized grower report document providing valuable baseline information. Participants expressed that they understood the importance of water testing, establishing a baseline profile for water quality, and how the pilot project benefitted them. VDACS labs also felt the program helped them build capacity and better understand the needs of Virginia growers.</li> <li>• Efforts described herein have been critical for building capacity for VCE to deliver extension food safety programming to help meet a wide range of producer needs and challenges, although longer-term economic or public health impacts of this work are yet to be fully measured. This multi-leveled approach is cultivating a stronger food safety culture among produce growers in Virginia, thereby resulting in safer fresh fruits and vegetables, opening access to new markets, and complying with regulatory guidelines.</li> </ul>	
23.	<p><b>Catalyzing Agricultural and Educational Resources to Move the Local Food Value Chain Needle in Virginia</b></p>	<p><b>Relevance:</b> Despite growing demand and support for local food systems, barriers to sustainable success remain for farmers and food businesses, including limited or unwieldy value chain coordination, logistical hurdles, lack of transparent market signals, and inadequate scale, match and fit between producers and buyers.</p> <p><b>Response:</b> Virginia Tech’s (VT) Center for Food Systems and Community Transformation and Community, Local, and Regional Food Systems (CLRFS) Program Team, the Virginia Beginning Farmer and Rancher Coalition (VBFRC), Virginia Fresh Produce Food Safety Team, and community project</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>

		<p>partners, initiated and secured a USDA-Agricultural Marketing Service Local Food Promotion Program (USDA-AMS-LFPP) implementation grant (\$496,839). Community and statewide partners include 4P Foods, the Local Food Hub, Wadel’s Farm Wagon, Shenandoah Valley Produce Auction, Common Grain Alliance, Virginia Department of Education, Virginia Department of Agriculture and Consumer Services, Virginia USDA-NRCS, Municipal Washington Council of Governments, Future Harvest-CASA, the Agua Fund, the Virginia Soil Health Coalition, National Buy Fresh Buy Local, Farmers Market Coalition, and the University of Virginia. The aim is to increase the promotion of local and regional foods produced and marketed by small and mid-sized farms and food businesses such as produce auctions, farm stands/markets, aggregators, and distributors, with shared goals of improved market share and economic health of communities. Educational outreach and value chain coordination has included: a Farm2Fork Affair and ongoing producer-buyer networking, Virginia Market Readiness Farm to Restaurant Workshops, On-farm Food Safety Walkthroughs, exploring a Soil Health Awareness/Action Campaign, and expanding the scope of the Shenandoah Valley and Northern Piedmont Buy Fresh Buy Local chapters in coordination with Virginia Market Maker.</p> <p><b>Results:</b> Some emerging results associated with the Local Food Promotion Program Grant in 2019-2020 and the effort to move the local food value chain needle in Virginia were as follows:</p> <ul style="list-style-type: none"> <li>• Listings on the Virginia Market Maker site increased from 300 to 1,200 farm and food business profiles, new registrations to the MarketMaker service increased 11x from the year before.</li> <li>• There was a 74% increase in the number of businesses that made updates to their profile compared to the year before.</li> </ul>	
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		<p>training in food safety and commercial production and integrated pest management. 248 participants from the Northern Shenandoah Valley and West Virginia received tree fruit production and pest management training by attending the weekly early-season Virginia Commercial Fruit Meetings via Zoom.</p>	
<p>24.</p>	<p><b>Eat Smart, Move More at Farmers Markets Improves Healthy Affordable Food Access in Central District</b></p>	<p><b>Relevance:</b> According to Supplemental Nutrition Assistance Program (SNAP) participation rates from the Virginia Department of Social Services, there are over 15,000 low-income households and over 35,000 people in Central District who are eligible to participate in SNAP. Research shows that SNAP clients who shop at farmers’ markets eat an average of 1.6 more servings of fruits and vegetables every day and have a lower Body Mass Index (BMI), both of which are front line factors in combating obesity. The Robert Wood Johnson Foundation shows that Central District is one of the most health disparaged and most obese regions of the state. Unless a farmers’ market or farmer has an EBT machine, these families don’t have the resources to purchase locally grown fresh fruits and vegetables.</p> <p><b>Response:</b> For the second year in a row, Central District was awarded a \$3,000 grant to encourage SNAP clients to shop at farmers’ markets that had an EBT machine for them to redeem benefits. Two workshops, a Wrap-Up/Kick-Off Workshop and a Celebration Workshop were planned for Market Managers, Extension Agents, and Program Assistants in Central District to help them develop plans for a successful selling season that included encouraging SNAP eligible families and others to shop at the market. Agents and program assistants supported their local markets by planning special events and demonstrations, providing short social media messages, and encouraging markets to seek funds for a double bucks program. Program Assistants promoted shopping at farmers’ markets with their clients in face-to-face meetings and other one-time events.</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>

		<p><b>Results:</b> Central District agents doubled the number of farmers’ markets participating in the SNAP redemption program from 8 to 16. Twenty-eight special events were planned at the Central District farmers’ markets throughout the summer, as well as 99 food and gardening demonstrations. Markets used a variety of methods to publicize events, including 818 messages on Facebook, over 2,200 posters and flyers, and 1,216 brochures. Markets estimated an average of a 53% increase in sales, and a 33% increase in traffic. Almost \$19,800 benefit dollars were redeemed at markets, which was a 61% increase from the year before. Five markets received funding for a double bucks program, which provided an additional \$7,418 in sales to farmers.</p>	
<p>25.</p>	<p><b>Expanding Food Safety Protocols in an Evolving Landscape of COVID-19</b></p>	<p><b>Relevance:</b> In late 2019, the novel coronavirus, SARS-CoV2, emerged in Wuhan, China, and rapidly spread worldwide into a pandemic. As the virus spread in the United States, there were many questions related to SARS-CoV2 behavior, how it is transmitted, its viability, its inactivation, and recommendations for food-based businesses. It was especially important to provide science-based information related to food safety practices along the farm to fork continuum, focusing primarily on production and processing practices in the face of COVID-19. A critical need with food safety programming was to make sure all workers, supervisors, and decision-makers in the food supply chain received timely, accurate information so as to help them be better equipped to incorporate policies and best practices aimed at minimizing viral spread. Since there was no evidence that the virus was associated with consuming contaminated food, an especially important objective was to dispel any misconceptions about coronavirus being a foodborne illness.</p> <p><b>Response:</b> Given the wealth of experience with microbiology and food safety practices, several individuals from the Virginia Tech Food Science &amp; Technology Department and the School of Plant and Environmental</p>	<p>Agricultural Viability, Profitability, and Sustainability</p>



		<p>Sciences partnered to develop and deliver a 2 hour, live webinar in April 2020, drawing 337 participants from all over the U.S. Subsequent to the success of the live webinar, the recording was edited into four shorter videos, then published on-line via Virginia Cooperative Extension (Expanding Food Safety Protocols in an Evolving Landscape of COVID-19: Part 1-4 (SPES-205-208-videos), and also added to the FPFST YouTube channel (<a href="https://www.youtube.com/channel/UC_yVOBIU3X1T-ntRLUpiNdQ">https://www.youtube.com/channel/UC_yVOBIU3X1T-ntRLUpiNdQ</a>). The team also created a factsheet entitled, “Expanding Food Safety Protocols in an Evolving Landscape of COVID-19”, condensed from questions posed during the webinar (<a href="https://vtechworks.lib.vt.edu/handle/10919/98895">https://vtechworks.lib.vt.edu/handle/10919/98895</a>). Additionally, Laura Strawn presented a “COVID-19 and Food” talk in July 2020. Did you do more than this talk?</p> <p><b>Results:</b> In addition to the many participants and viewers of the webinars and videos, as well as the factsheet downloads, these early efforts and the many unanswered questions about SARS-CoV-2 exemplify the need for on-going research and education related to best food safety handling practices. Recently, Virginia Tech researchers received a two-year, \$1 million grant from the USDA National Institute of Food and Agriculture. The research team will be studying how long SARS-CoV-2 survives on surfaces, focusing on its survival on food, food contact surfaces, and other points along the food supply chain. The project will address such topics as how to ensure that someone won’t contract SARS-CoV-2 from handling packaging and how to properly sanitize at all levels of food distribution and production. After the completion of the study, stakeholders at all levels of the food supply chain will have access to materials that provide a wide-ranging, systematic approach to safety, detailing steps that should be taken to ensure the health and safety of everyone involved, ensuring that the food supply chain is resilient now and in the future.</p>	
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**2. Biotechnology, Biomaterials, and Bioenergy**

Corresponding VCE Program Team:

- Natural Resources Management

No.	Title or Activity Description	Outcome/Impact Statement	Planned Program Name/No.
26.	<b>2020 Spanish Pesticide Training Testing for Orchards</b>	<p><b>Relevance:</b> According to U.S. Census Bureau population estimates, there are roughly 54 million Hispanics living in the United States, representing approximately 17% of the U.S. total population, making people of Hispanic origin the nation's largest ethnic or race minority. Many local orchards and regional landscaping businesses employ Hispanic workers. These workers may be working with or around pesticides. Making sure everyone has proper training is a goal of everyone involved. Pesticides are vital tools for managing pests that reduce crop yield and quality, spread disease, congest our waterways, or jeopardize our quality of life. The misuse of pesticides can threaten our health and environment. State and federal pesticide laws require applicators to be certified by passing one or more examinations about pesticides and their safe use. Pesticides are classified by the U.S. Environmental Protection Agency (EPA) as either general-use or restricted-use. Restricted-use pesticides have a greater potential to harm humans, the environment, or both. Only a certified pesticide applicator or someone who works under his or her supervision may apply restricted-use pesticides.</p> <p><b>Response:</b> With the high number of requests for this program, VCE put together a study guide and worked with VDAC's to make a Spanish written study guide for participants. VCE agents put together a Spanish translation</p>	Biotechnology, Biomaterials, and Bioenergy

		<p>of the Pesticide Safety meeting and testing for Spanish speaking employees. Employers offered Hispanic employees a pay raise if they completed the training and passed the registered tech pesticide test. First the information was provided in English and then provided in Spanish. This training has led to the request of further training.</p> <p><b>Results:</b> Fifteen Hispanic employees participated in this training and testing. This is the fifth time holding the pesticide program working with Spanish speaking minorities. After completing the safety training, participants took the registered tech test for licensure. The success rate increased to 90%. When surveyed by a show of hands, we had one hundred percent on each question asked. Did you enjoy the training and find it beneficial? Do you feel safer using pesticides at work? Would you recommend this training or participate in future events? .</p>	
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### 3. Community Viability

Corresponding VCE Program Teams:

- Community, Local, and Regional Food Systems
- Family and Community Economics
- Leadership, Volunteerism, and Civic Engagement

No.	Project or Program Title	Outcome/Impact Statement	Critical Issue Name or No.
27.	<b>Controlling Urban Pests (German Cockroach) in Multi-Unit Housing for Improved Living Conditions</b>	<b>Relevance:</b> Multi-unit housing, such as apartment buildings, hotels, and public housing facilities, often struggle with infestations of cockroaches. Such infestations contribute to unhealthy living conditions. Pest control companies are continuously seeking pest management practices that can	Community Viability

		<p>be utilized safely and with the needed efficacy to address the emergence and continued infestations that occur in multi-unit housing situations. Researchers at Virginia Tech addressed this challenge using an assessment-based pest management program for German cockroach control.</p> <p><b>Response:</b> A 390-day assessment-based pest management study was completed in three U.S. HUD housing locations in Virginia. Residences were not pre-prepared (residents did not prepare or clean) in advance of treatment applications. Overnight cockroach bait traps were introduced into housing units to determine the volume of gel bait to apply and studies were carried out over 390 days.</p> <p><b>Results:</b> In all three housing authorities, cockroach populations in test units were reduced by &gt;90%. In 75% of the test units, cockroach infestations were eliminated. Low-level infestations were the most difficult to eliminate but it is possible to reach elimination with additional time. Heavily infested units may require over 240 days to reach elimination with no rebounding populations of cockroaches. An assessment-based program can be implemented to eliminate German cockroach infestations and improve the lives of the communities dwelling in multi-unit housing. These populations often include low-income, underrepresented, and minority communities.</p> <ul style="list-style-type: none"> <li>• This project was conducted as part of the Virginia Agricultural Experiment Station, through Hatch Project No. VA-160029 (Accession No. 1005530). Funding for this project was also provided by industry sponsors, Cornell University, and HUD.</li> <li>• Miller, D.M. and E. P. Smith. 2019. Quantifying the efficacy of an Assessment-based pest management (APM) program for</li> </ul>	
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		<ul style="list-style-type: none"> <li>• German cockroach (Blattodea: Blattellidae) control in low-income public housing units. Journal of Economic Entomology.</li> <li>• <a href="https://doi.org/10.1093/jee/toz302">https://doi.org/10.1093/jee/toz302</a>.</li> </ul>	
28.	<p><b>Creation of Dan River Region Community Resource Guide in Response to Needs During COVID-19 Pandemic (2020)</b></p>	<p><b>Relevance:</b> When the COVID-19 pandemic reached the United States in early 2020, many states and localities found themselves unprepared to manage the public health risks and resulting economic challenges. The City of Danville and Pittsylvania County, the communities served by The Health Collaborative, were especially vulnerable due to existing levels of poverty and unemployment significantly higher than the state average. According to 2018 estimates, 8,717 Danville residents and 9,457 County residents, were living below the poverty level. United Way’s 2017 ALICE (Asset Limited, Income Constrained, Employed) Report demonstrated that an additional 10,613 people in Danville and 13,187 people in Pittsylvania County were living below the ALICE threshold, meaning they were earning more than the Federal Poverty Level, but less than the basic cost of living. As a result, combined poverty and ALICE rates revealed that nearly 42% of people across the region were struggling to afford basic needs. Between March and April of 2020, rates of unemployment surged from 6.4% to 16.4% in Danville and from 4.3% to 12.9% in Pittsylvania County. This created additional challenges for families who were already experiencing food insecurity, 16.8% of people in Danville and 12.3% in Pittsylvania County.</p> <p><b>Response:</b> We continued to hear about businesses, organizations, neighborhood groups, and faith-based communities who were stepping up to help their neighbors, but there was no way of knowing who was doing what throughout the region. In response, The Health Collaborative developed the Dan River Region Community Resource Guide. We first</p>	Community Viability

		<p>created and distributed a survey in which collaborative partners and community members shared information about groups and organizations, both formal and informal, that were providing various types of aid and support to our communities. We organized responses by type of resource and localities served and then compiled them into an interactive online guide. We continued to update and share the guide while taking note of the areas in which resources were lacking.</p> <p><b>Results:</b> The guide was initially sent directly to 315 people and has been included in every Health Partner Update email since, reaching nearly 300 people each week. It was also posted on The Health Collaborative’s Facebook page where Facebook Analytics find that it has reached 654 people in addition to being shared eighteen times. We have no way of knowing how many individuals utilized the resources listed in the guide, but feedback from community members has been extremely positive. Additionally, the ability to identify gaps in services and resources allowed us to recommend areas of additional investment to the Danville Regional Foundation. As a result, they developed a partnership with the Community Foundation of the Dan River Region to offer a Coronavirus Relief Fund with grants for nonprofits and small businesses working to serve the community. In May, they had distributed \$132,800 to organizations across the region to help support their relief efforts.</p>	
29.	<p><b>Addressing Disparities in Maternal and Infant Health Outcomes (2020)</b></p>	<p><b>Relevance:</b> According to a report by the CDC, “Black and American Indian/Alaska Native women are two to three times more likely to die from pregnancy-related causes than white women”. Even for women with higher incomes and levels of education, these significant differences still exist. The pregnancy-related mortality ratio for Black women with at least a college degree was 5.2 times that of white women with the same level of</p>	Community Viability

		<p>education. Additionally, in Danville and Pittsylvania County, 6.8% of women receive late or no prenatal care, 11.6% of infants are born pre-term, and 11.2% are born with low birth weight. These are higher than the state rates of 4.2%, 9.5%, and 8.4% respectively. Research attributes these disparities to several systemic issues related to poverty, rurality, racism, and bias within the healthcare system.</p> <p><b>Response:</b> The Health Collaborative convened a group of stakeholders representing local healthcare providers, OB/GYNs, and mothers to discuss maternal health disparities during a Roundtable Discussion with Senator Tim Kaine. After the Roundtable event, participants shared their experience with members of the Regional Collaborative who continued to host discussions on this issue. To move the conversation towards action, The Health Collaborative recruited a Danville native and current Public Health Graduate student to assist with research and raising awareness for this issue locally.</p> <p><b>Results:</b> With input from medical professionals, health advocacy groups, and members of The Health Collaborative who participated in the Roundtable Discussion, Senator Kaine introduced the Mothers and Newborns Success Act which would help address significant inequities by “strengthening support for women during and after pregnancy, promoting maternal health research and data collection, and ensuring women are better matched with birthing facilities that meet their specific needs”. The Health Collaborative and twenty-six other organizations and associations signed on in support of the federal legislation. It is currently under review by members of the Senate Health, Education, Labor, and Pensions Committee. Locally, Danielle Deshazor is working with The Health Collaborative to complete a Photovoice project, which will highlight ten</p>	
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		<p>individual women and their lived experiences related to maternal and infant health. The project will help raise awareness of the specific challenges experienced by women in our region. Danielle will also use the women’s input and her knowledge of best practices to develop a report with recommendations for addressing this issue on the local level. The Health Collaborative is actively engaging additional partners to form a workgroup that will collaborate to implement the recommended strategies.</p>	
<p>30.</p>	<p><b>2020 VCE Team Creates Brave Space to Increase Racial Understanding and Foster Connections Online</b></p>	<p><b>Relevance:</b> Far too often we hear stories of conflict among people from differing racial/ethnic backgrounds and they continue to escalate, as evidenced by the nationwide outcry against racial injustice that started in the summer of 2020 in response to racialized violence. Within Extension, we are challenged by how to navigate these differences and discussions internally and in support of our communities. Our universities promote diversity and inclusion, but the institutional settings often hinder authentic connections and dialogues. An October 2020 Journal of Extension article (<a href="https://joe.org/joe/2020october/comm1.php">https://joe.org/joe/2020october/comm1.php</a>) confirmed this as they identified the inadequacy of most diversity, equity, and inclusion trainings at our institutions, highlighting the lack of action and progress stemming from those workshops. Notably, conversations about race, racism, and racial justice are generally uncomfortable and can easily lead to further division, hurt, and misunderstanding. Essential to positive change are the basics of understanding and trust. Increasingly we need supportive spaces to engage in courageous conversations that seldom surface constructively without intentional design. In recognition of these needs and the key role that Extension nationally could play to help hurting communities, the Extension Committee on Operations and Policy initiated in 2016 focused attention on how Extension could advance this work. Thus, Coming</p>	<p>Community Viability</p>



		<p>Together for Racial Understanding (CTRU) was launched expressly to build Extension's capacity to facilitate civil dialogues around race. The programming was designed for in-person delivery and had been working well in those spaces until COVID-19 halted those efforts in Virginia and nationally.</p> <p><b>Response:</b> Without the opportunity to connect in person due to COVID-19, and with the urgency to engage in discussions about race relations, the Virginia Coming Together for Racial Understanding (CTRU) team moved to respond. Given that prior to the outrage and unrelenting demand for action, the general consensus had been that the nature of racial dialogues necessitated an in-person environment. Thus, when the VCE team sought input from the national network for examples of virtual dialogues we learned that no state had pivoted to online sessions. Never intending to be the pioneers in this space, the team knew that the need was too great and the timing too critical to wait for someone else to take lead. Thus, VCE collaborated with Everyday Democracy who authored much of the CTRU curricula and are national experts in race-based dialogues to ensure a helpful, useful process. VCE, then, became the first Extension system to respond and hold these conversations virtually and at a time where emotions raged high from people just realizing racial injustice and those who live it. We launched virtual dialogues for any VCE employee that wanted to participate. The response was a whopping 168 VCE personnel. The three-person CTRU team could not accommodate the needs there, and members of the VCE Inclusion and Diversity Fellows joined us to facilitate a 3-session series of 90-minute dialogues centered on racial healing in direct response to elevated conversations about racial justice. The final session provided opportunities to share ideas for moving VCE forward and the dialogues would have formally ended with that, shifting</p>	
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		<p>more to working groups on the highest priorities. However, the largest, most frequent and strongest request was to keep the dialogue process going. That request was made from the Extension personnel and the highest levels of leadership. Once again, since VCE is ahead of other states the team planned and consulted with national experts. After a short planning period, we commenced twice monthly dialogues in close collaboration with members of the VCE Inclusion and Diversity team. The VCE team has been able to share lessons learned and strategies for the 29 other state VCE systems and one team member was recruited to join the National CTRU Training Team. The team is working in close concert with Texas and Michigan to share strategies and the VCE CTRU team was recently asked to coach a newer state team to start up in their state.</p> <p><b>Results:</b> The results of this work continue to evolve and develop, and notably the fact that participants wanted to keep the dialogue going after we finished the process is indicative of the positive impact on people. More formally, however, a quantitative survey was administered immediately following the third session of the three-part series in June. Responses were received from 65 participants and revealed that 51.6 percent of participants strongly agree, and 93.5 percent either strongly or somewhat agree that this program will help them grow as a person. Similarly, 58.1 percent of participants strongly agree, and 95.2 percent either strongly or somewhat agree that this program will be useful for them in their Extension work. On all six pre/post competency questions, the average score across all participants increased from between 0.4 and 0.89 points on a scale of 1-5:</p> <ul style="list-style-type: none"> <li>• Ability to communicate effectively with someone from a different race/ethnic background (3.68 to 4.08, an increase of 0.4)</li> </ul>	
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		<ul style="list-style-type: none"> <li>• Interest to work in the area of civil dialogues to promote racial understanding (3.46 to 4.3, an increase of 0.84)</li> <li>• Understanding of how civil dialogue efforts fit within the Extension mission (3.27 to 4.14, an increase of 0.87)</li> <li>• Comfort with conversations across racial differences with diverse audiences (3.17 to 4.06, an increase of 0.89)</li> <li>• Understanding of how dialogue can positively impact complex issues (3.52 to 4.37, an increase of 0.84)</li> <li>• Understanding of how to engage racially diverse audiences in important dialogues (2.95 to 3.59, an increase of 0.63)</li> </ul> <p>In addition to the quantitative and qualitative evaluation results, countless emails and phone calls from colleagues have noted how positively this is impacting individuals across all racial backgrounds within VCE. The work is not easy for the facilitators or participants but is indeed moving us to be a better organization for the Commonwealth.</p>	
<p>31.</p>	<p><b>2020 Facilitation Impact Statement</b></p>	<p><b>Relevance:</b> Community leaders continue to express the need for increased understanding of the best options for community engagement, facilitation, conflict resolution, meeting management, and strategic or project planning and implementation. These skill sets are essential for community leaders to support community progress. This need has been validated by the increased number of requests received for assistance in decision-making conversations and strategic planning and Virginia Cooperative Extension is appropriately situated to address solutions to meet this need through program development and content delivery.</p> <p><b>Response:</b> In response to addressing community leadership needs, Virginia Cooperative Extension equipped its agents and specialists with tools for planning and delivering facilitation services using the Strengthening Your</p>	<p>Community Viability</p>

		<p>Facilitation Skills (SYFS) curriculum. In addition, specialists are prepared to design a process for planning and decision-making and deliver facilitation support to agencies, organizations, and community groups in Virginia cities and counties delivering and utilizing the Strategic and Project Planning (SPP) curriculum designed in 2018. When it came to program delivery in 2020, however, the COVID pandemic posed disruptive challenges. In response, a team of agents and specialists decided to postpone in-person SFYS training until late summer and fall with the hope of delivering the programming and these were ultimately cancelled for 2020. Plans are under development for summer and fall 2021 in-person sections as the pandemic continues to impact group gatherings, with the understanding that this course is best delivered in-person when participants can engage experientially as adult learners and give and receive peer feedback as part of the learning process. Additionally, Virginia specialists are working with faculty from Maine, Vermont, and New Hampshire to develop a virtual SYFS training program that will be ready for 2021 delivery. The SPP course, although ideal in-person, was converted to a 3-hour condensed session delivered via Zoom for a select group of clients that needed the training content for immediate use. This was delivered to 32 participants over the course of three sections; two were small and personalized and one was a large statewide training for SWCDs working on program plans to file per Code of Virginia requirements. Virginia Cooperative Extension faculty engage regularly with stakeholders around decision-making and planning topics. In 2020, these stakeholder interactions included, but were not limited to: Virginia Association of Soil and Water Conservation Districts, Thomas Jefferson SWCD, Blue Ridge SWCD, Tri-County/City SWCD, Virginia Cattle Industry Board, Chesapeake Bay Foundation Mountains-to-Bay</p>	
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		<p>Grazing Alliance, Virginia Farm Bureau, CALS Global, Leadership Amherst, Virginia Association of Counties, and the VT Cyberbiosecurity Initiative.</p> <p><b>Results:</b> 2020 posed several COVID-19 pandemic related challenges that resulted in creative adjustments to program delivery formats and a thoughtful approach to how best to meet stakeholder needs with this VCE service. Commitment to delivering excellent facilitation skills in various settings, in addition to providing training, proved successful in our endeavors as a team. 100% of surveyed respondents of the Strategic and Project Planning virtual sessions reported that the information was useful and will help them with their work. The remote format and materials provided, as well as real-world examples, were highlighted as positive aspects. One person wrote, “I’ll definitely refer to the documents you provided. They are a wealth of information for program planning and implementation. In my past life, I had no such models, and my programs, though successful, were planned with a strategy, but I had to devise it on my own.” 100% of respondents will recommend this training to others and are supportive of a virtual format if necessitated by COVID, although they feel an in-person option that stages the learning would be beneficial. Requests for workshop training and facilitated planning support continue to come in for 2021. Additionally, a new opportunity to facilitate the two-day meetings for the Securing Agriculture, Food, and its Economy (SAFE) with Cyberbiosecurity Summit was an opportunity to leverage VCE and ALCE facilitators in a national event sponsored by CALS.</p>	
<p>32.</p>	<p><b>2020 Desktop Farm Day - Google Site</b></p>	<p><b>Relevance:</b> In early March of 2020, the COVID-19 virus control measures brought in-school learning to a halt, and all public and private educational programs moved to a virtual format. These state-wide health measures to prevent the spread of COVID-19 also impacted on-farm programs like Farm</p>	<p>Community Viability</p>

		<p>Days and Ag Days. These on-farm agriculture awareness activities were cancelled across the State which prevented thousands of young people from having an opportunity to learn about local agriculture. In many localities, these activities are the only time youth have any face-to-face interaction with Agriculture. Due to this change, we received calls from parents, friends, educators and clients asking for on-line information related to Environmental Science and Agriculture Awareness topics in order to help fill the void caused by this.</p> <p><b>Response:</b> We sent educators and others links to websites and publications to help with agriculture-based information. Several clients continued to ask for more materials that were interactive or visual. Due to these requests, we started recording activities during field calls and made a few short videos that would help educators and students see real on-farm activities. We wanted to produce short videos that showed how some of our Virginia Ag Commodities and Livestock are cared for and produced on the farm. We decide to produce additional videos and expanded the topics. Additionally, VCE developed an online Google site called “Desktop Farm Day” to house these videos for easy access. The addition of the online site enabled teachers to easily assign videos to their students as classwork. To attract more educators to utilize the Desktop Farm Day site, a relevant quiz was included with each video to ensure viewer knowledge attainment and participation. A link to an Extension publications was also included to support the videos.</p> <p><b>Results:</b> The Desktop Farm Site has had over 200 visits and over 300 video views between October 5 and December 31, 2020. During 2020, VCE filmed and produced 21 agriculture awareness videos and created 21 quizzes. We worked with more than 60 volunteers to film and produce the</p>	
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		<p>video sessions. Volunteers assisted by either participating in the video and sharing their technical knowledge of the subject or helping with production logistics and/or video review prior to final editing.</p>	
<p>33.</p>	<p><b>2020 Community Leadership and Civic Engagement Program Team Impact</b></p>	<p><b>Relevance:</b> “People have the inherent capacity to solve their own problems and that social transformation is within the reach of all communities” (Kellogg Foundation, 2009). However, there is a need to prepare volunteers, civic leaders, and elected and appointed officials to be the force for positive change within their communities. Research supports this notion that community leaders need to be involved in the decision-making process and problem solving to help organize and develop their communities. Yet, there is often a lack of formal leadership training that equips community leaders with the skills necessary to effectively meet community needs (Tackey, Findlay, Baharanyi, &amp; Pierce, 2004). Educational programs focused on leadership and civic engagement can build the capacity of youth and adults to effectively participate in community planning and decision-making. The Unit Situation Analysis and Issues Reports revealed a clear need for community leadership through more representative civic engagement, especially as it relates to youth involvement in their communities, growing future leaders who give back to their communities, educating youth and adults on civic matters to foster greater participation in decision-making, and providing employment opportunities that entice youth to remain in their communities as adults.</p> <p><b>Response:</b> The Community Leadership and Civic Engagement (CLCE) Program Team offers VCE professionals an opportunity to "buy-in" to the associated action plans. For calendar year 2021, a total of 50 agents and 19 specialists bought-in. The CLCE Program Team supports those agents in</p>	<p>Community Viability</p>

		<p>their work through professional learning and regular formative evaluation. Areas of work are organized into the following sub-groups:</p> <ul style="list-style-type: none"> <li>• Civic Engagement: Enhance the capacity of youth and adults to engage in civic activities locally, regionally, statewide, and globally through providing science-based educational tools, resources, programs, events, and hands-on learning experiences.</li> <li>• Community Leadership: Enhance leadership by improving communication and development of an effective decision-making process among individuals, both youth and adults.</li> </ul> <p><b>Results:</b> Community leadership, civic engagement continues to be large and critical areas for Virginia Cooperative Extension programming. In calendar year 2020, educational contacts reported under the Community Leadership, and Civic Engagement (CLCE) Program Team action plans spanned six planned program areas (Agriculture Profitability and Sustainability; Community Viability, Food, Nutrition, and Health; Natural Resources, Environment, and Climate Change; Strengthening Virginia Families; and Youth Development) and totaled 4218 direct contacts and 3663 indirect contacts across our sub-teams. In aggregate, the CLCE Program Team work reflects 7881 contacts supporting the mission of VCE, helping people put scientific knowledge to work through learning experiences that improve economic, environmental, and social well-being.</p>	
<p>34.</p>	<p><b>2020 Engaging Youth Voices in Conversations about Race: Professional Development Lunch and Learn 3-part Series</b></p>	<p><b>Relevance:</b> In summer 2020, a national outcry for racial justice elevated the need for conversations around race and racism. Young people were talking and ready to engage the adults in their lives, thus they needed a space to engage in the critical discussions in a productive, supportive way. Youth serving professionals and volunteers grappled with how to do this in the most constructive manner and how to push past discomfort to</p>	<p>Community Viability</p>



		<p>establish a brave space. Youth development professionals also sought ways to lift up youth voices to ensure their inclusion in the larger conversations around racial justice.</p> <p><b>Response:</b> In response to requests from adults working with and serving teens, a partnership between VCE and North Carolina Cooperative Extension was developed to offer a lunch and learn three-part series on the following topics: Helping Teens Find Healing Through Difficult Conversations ; Youth Voice: A Key Component of Healing Communities; Healing for Youth Programming: Understanding to Support Youth from ALL Racial Backgrounds. The first session discussed holding space for challenging conversations about race and racism. Session two began with a panel of youth discussing their own thoughts and perspectives on the current call for racial justice and the broader issues of race and racism. Two notable programs, namely Virginia Youth Voices from Virginia 4-H and #PasstheMicYouth from North Carolina Extension were shared as replicable, successful programs for amplifying youth voices. The final session hosted a national panel of experts in racially-diverse youth programming from Fort Valley State University, Penn State University, Southern University and Virginia Cooperative Extension. Success stories, tips, lessons learned and key strategies were presented.</p> <p><b>Results:</b> More than 300 youth serving professionals from across the nation participated in the series. A Qualtrics survey was administered at the conclusion with 36 respondents. The first question asked: How useful was the information presented? All respondents rated the series as either extremely useful (47 percent) or very useful (53 percent). Participants were also asked: How likely are you to use something you learned? More than three-quarters (78 percent) replied extremely likely, with 19 percent stating they were somewhat likely to apply something their learned. There was also an open-ended question asking participants to identify one take-</p>	
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		<p>away from the series. The overwhelming majority of respondents identified the critical importance of listening intently to youth about issues of race and racism, even if it is uncomfortable. Since the series ended, the planning team leaders have been asked to present on it at a national conference, coach two additional state Extension systems that want to replicate it in their area, and have had multiple requests for the recordings.</p>	
<p>35.</p>	<p><b>Creating Cancer Awareness In Virginia Cooperative Extension</b></p>	<p><b>Relevance:</b> The connection between lifestyle and cancer risk is now accepted in the scientific community. It is estimated that nearly 50% of the most common cancer can be prevented through healthy living and preventive vaccines and screenings. Cancer is a significant public health burden. Over 15.5 million Americans are living with cancer in the U.S., and an additional 1.5 million are diagnosed annually. Cancer will soon have the ignoble distinction of being the leading cause of death in our nation. We are not helpless in the face of these projections, however. As the Nation renews its resolve to beat this disease through the “Cancer Moonshot” initiative, Cooperative Extension has a significant role to play in empowering Americans to develop the lifestyle behaviors that will decrease the incidence of cancer, and improve the lives of those living with the disease.</p> <p><b>Response:</b> Cancer symposia were designed and implemented in each of the four Extension Districts to provide an orientation of Extension Faculty and staff to cancer, prevention and early detection recommendations, and cancer resources at the local, state, and national level, as well as provide an opportunity for networking between Extension personnel and representatives from cancer related organizations. The relevance and role of Cooperative Extension in cancer prevention was presented during each symposium. Representatives from the relevant stakeholders within each district that provide cancer care, education and support were invited to</p>	<p>Community Viability</p>

		<p>provide information about their organization’s activities. Local cancer healthcare providers presented information on cancer, screening guidelines, and treatment. Extension Specialists described the connection between lifestyle behaviors and cancer risk, and the agricultural products currently promoted by Extension as part of a healthy, cancer risk reduction dietary pattern. Local representatives of national cancer organizations including the American Cancer Society and Susan G. Komen were part of each symposium, as were representatives for the Virginia Department of Health.</p>	
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**4. Food, Nutrition, and Health**

Corresponding VCE Program Team:

- Food, Nutrition, and Health

No.	Title or Activity Description	Outcome/Impact Statement	Planned Program Name/No.
36.	<p><b>Farmers’ market social distance signage posters improve customer and vendor safety during COVID-19 Pandemic</b></p>	<p><b>Relevance:</b> In Virginia, farmers’ markets are considered an essential retail business and are permitted to operate during the COVID-19 state of emergency declared by the State of Virginia Governor’s office on March 24, 2020. Operational guidance from the Virginia Department of Agriculture &amp; Consumer Services advises farmers’ markets to adhere to social distancing practices recommended by the Centers for Disease Control. Social distancing is the physical practice of keeping a six-foot distance between individuals at all times. Enforcing required social distancing measures at farmers’ markets is a unique challenge due to the close relationships formed between customers and farmers. The farmers’ market is a socializing event as much as it is a shopping excursion with customers lingering over products in close</p>	<p>Food, Nutrition, and Health</p>

		<p>proximity to each other and vendors chatting with customers for an extended amount of time. An important key to implementing social distancing measures recommended by governmental officials is the utilization of easy to understand and informative signage. Conspicuously displaying effective signage throughout a farmers’ market environment to prompt, remind and encourage both vendors and visitors of the importance of social distancing to prevent person-to-person spread of the COVID-19 virus assists in safe market operation during the pandemic. Based on an informal needs assessment with the members of the Virginia Farmers Market Association it was determined that farmers’ markets managers and vendors did not have access to effective, attractive and non-offensive social distancing signage to post at their farmers’ market booths and entrances.</p> <p><b>Response:</b> In order to address the identified need for COVID-19 social distancing signage promoting a safe and non-offensive farmers’ market shopping experience, the Virginia State University Cooperative Extension Marketing and Agribusiness program researched and created six new farmers’ market themed COVID-19 social distancing posters. Collaboration with the Virginia Farmers Market Association, Virginia Cooperative Extension offices, select USDA service centers, Virginia Agritourism and Virginia Beginning Farmer networks, Virginia Department of Agriculture and Consumer Services and Farm Bureau contacts assisted in the distribution of posters via email, social media, and access to poster downloads on the VCE publication website: <a href="https://www.pubs.ext.vt.edu/AAEC/AAEC-226/AAEC-226.html">https://www.pubs.ext.vt.edu/AAEC/AAEC-226/AAEC-226.html</a></p> <p><b>Results:</b> In 2020, as a result of the development and collaborative distribution of COVID-19 social distancing signage, 356 farmers market managers and over 20,000 small and limited resource farmers selling directly</p>	
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		to the public (roadside stands, on farm stores, u-pick operations) were able to access, download, print and display COVID-19 social distancing signage.	
37.	<p><b>2020 Gardens to Go Help Eastern Shore Migrant Head Start Families increase Access to Fresh Vegetables</b></p>	<p><b>Relevance:</b> Every year approximately 4,000 migrant farmworkers, including families, arrive in Virginia in late April and stay through November. They work 10 to 12 hours a day, 7 days a week during the growing and harvesting season. They are the backbone of our local agricultural economy. Yet, they live and work among us in poverty and isolation. During COVID-19, this community on the Eastern Shore of Virginia has been impacted greatly. With school districts closing in-person education early for the 2019-2020 academic year, children who rely on federally funded school meal programs are at an increased risk for food insecurity. In addition, temporary food shortages, supply chain disruptions, and concerns over in-person food shopping may have decreased access to fresh and healthy vegetables for families.</p> <p><b>Response:</b> The Gardens to Go mini-grant program was offered by the Virginia Family Nutrition Program (FNP) during the COVID-19 pandemic. This program encourages increased access to fresh vegetables for limited-resource families in Virginia. The Gardens to Go team on the Eastern Shore received \$250.00 grant aimed at growing fresh vegetables and herbs. The Eastern Shore Migrant HeadStart families from the Cheriton and Parksley areas took part in this awesome opportunity. Twenty families participated to help to increase access to healthy foods. The grant team partnered with Virginia Direct Services and Accomack 4H to deliver grow bags, potting soil, and herbs to families participating in the Gardens to Go program.</p> <p><b>Results:</b></p> <ul style="list-style-type: none"> <li>• Total Participants - 20 families from Cheriton and Parksley Migrant Head Start sites.</li> <li>• Total number of hours - 6 hours in school.</li> </ul>	Food, Nutrition, and Health

		<ul style="list-style-type: none"> <li>• Key Behaviors measured - Opportunity to grow their own food, gained family ownership during the pandemic. Youth experienced planning, learning the life cycle of plants, and the benefits of growing their own vegetables and herbs.</li> </ul>	
38.	<p><b>2020 Master Food Volunteer Program Continues to Reach Virginians through Family and Consumer Sciences Programs</b></p>	<p><b>Relevance:</b> The Centers for Disease Control and Prevention reports that 35.9% of self-reported adults in Virginia are overweight, and 30.4% of adults are obese. There is a critical need for educating consumers to improve overall health and quality of life in Virginia. Virginia Cooperative Extension (VCE) Family and Consumer Sciences (FCS) agent educators provide expertise and training with a food nutrition and health focus. Trained volunteers can help expand program delivery by educating more participants and freeing the FCS educator’s time to develop new audiences and programs.</p> <p><b>Response:</b> The Virginia Cooperative Extension Master Food Volunteer Program (adapted from Kansas State University) incorporates extensive 30-hour curriculum training with lesson plans/presentations, and supplemental teaching resources. This program was implemented in 2009. Participants gain knowledge of how to increase their consumption of fruits/vegetables, whole grains, increase physical activity, and learn how to purchase and prepare healthy, low-cost foods. Effective teaching techniques for working with diverse audiences are also emphasized.</p> <p><b>Results:</b> The COVID-19 pandemic presented some unique challenges for our Master Food Volunteer Program in 2020 as we re-arranged many of our educational programs to a virtual platform. While it may have been challenging in some ways, this year also provided an opportunity for Extension Agents and volunteers to re-evaluate our program delivery and how they can do so effectively through these virtual formats. Agents and Master Volunteers readily provided their time and expertise to support the development of online versions of some of our programs while also</p>	Food, Nutrition, and Health

		<p>providing other support to continue to writing local news articles and social media postings.</p> <p><b>Selected Educational Opportunities:</b> In April 2020, a two-day, virtual working session was held with an external facilitator from Radford University with 23 Extension specialists and agents from Virginia and additional faculty from Appalachian State University, University of Maryland, and Ohio State University, to update the Master Food Volunteer curriculum and training materials. As a result, our initial volunteer training was redesigned into a hybrid, online format (self-paced modules and weekly Zoom meetings) and involved this team of Extension specialists and agents to develop content and videos for the training modules. In fall 2020, a successful pilot volunteer training was delivered with seven new Master Food Volunteers by Extension Agents serving Fairfax, Arlington, Alexandria, and Loudoun counties. Master Food Volunteers in Roanoke County/City and Portsmouth trained as LIFT (Lifelong Improvements through Fitness Together) instructors and will be leading LIFT programs virtually 2021.</p> <p><b>Selected Participant Quotes:</b> Following are two personal quotes from participants who attended a Zoom Nutrition and Wellness COVID-19 presentation by Master Food Volunteers in Portsmouth:</p> <ul style="list-style-type: none"> <li>• “The biggest takeaway from participating in the Zoom session for me was to practice self-care, manage stress effectively and include physical activity in our daily lives, while eating healthy foods, even during a crisis situation such as COVID-19.”</li> <li>• “The biggest takeaway lesson for me from the program: Eat More Healthy, Be Safe, and Be More Active During The Pandemic.”</li> </ul>	
39.	<p><b>2020 Tackling Food Access, Nutrition and Consumption Among Preschoolers and Older</b></p>	<p><b>Relevance:</b> People living in communities with low food access suffer from disproportionately high rates of obesity, diabetes and other diet-related diseases, and a high incidence of diet-related deaths. Lynchburg has been</p>	<p>Food, Nutrition, and Health</p>

	<p><b>Adults In VA and OH During COVID-19</b></p>	<p>shown to have a high need, with a low food access rate of 26.4 percent, compared to 7.3 percent nationally. In the Near East Side of Columbus, Ohio, similar concerns have been raised. Specifically, poverty rates are 42 percent in the Near East Side of Columbus and 25 percent in Lynchburg, compared to a national average of 13.5 percent. There is limited access to fresh, healthy, affordable foods in these areas, and the rates of obesity and diet-related diseases soar above state average. Young children and older adults are the hardest hit. At the start of FLL, nearly one in five children nationally lived in a household that experienced food insecurity. Children in food insecure homes are absent from school at higher rates, have poorer social skills, and have a higher likelihood of being hospitalized compared to children who are food secure. Many limited-resource families also report buying the cheapest food rather than healthy food to provide enough to eat. Food insecure children are also more likely to live in skipped and multi-generational households, with relatives who also experience hunger and/or less healthy food consumption. The rate of hunger among seniors aged 60 and older has increased by 45 percent since 2001. Food access and security are significantly complex and require a transdisciplinary, collaborative and equitable approach.</p> <p><b>Response:</b> FLL engaged researchers and community members as co-creators of research questions and data collection, as well as partners in interpreting data and disseminating results. As aligned with CBPAR principles, FLL directly engaged stakeholders in problem-definition, programming, evaluation, and sustainability, and employed each members' strengths, such as local relationships, subject matter expertise, and/or community knowledge. Twelve Listening Sessions were planned collaboratively with key informants to ensure relevant stakeholder engagement and to identify cultural beliefs and norms around</p>	
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		<p>communication, project plans, and community engagement. The listening sessions recognized local expertise, asking respondents about strengths of community families and to identify existing healthy food resources and needs. The 75 participants included child and adult day site staff, older adults, parents, food systems and community development partner, and others with shared interests. Two Community Conversations were held for stakeholders to interpret and confirm themes from Listening Sessions. From these efforts each community formed a Discovery/Community Council. Community stakeholders in the Discovery Councils informed research questions and programmatic objectives to ensure reciprocity in the project. The resulting FLL goals include increasing access to, education about and consumption of healthy foods/nutrition. In response, FLL engaged local partners to develop an intergenerational program for preschoolers and older adults to address those goals. Snack bags, family-level programs, fresh-food market days, and a food pantry have been initiated. Reciprocity has been established through the development of sustainability plans as well as increased capacity with community partners and resources at all sites. During 2020 COVID restrictions closed sites. Thus, the FLL team pivoted to respond to pressing needs experienced by preschooler, older adults, and their families. In Virginia, support was provided to teachers at the preschool sites to deliver virtual lessons, including coaching, as well as an i-pad, and other materials. A new partnership was also formed with a faith-based organization that operates a large-scale food pantry, as well as a preschool.</p> <p><b>Results:</b> Building community partnerships, identifying evidence-based intergenerational strategies, documenting impact, and planning for sustainability are on-going. Key impacts include new partnerships formed and strengthened in communities. FLL delivers intergenerational nutrition education in 5 classrooms across two sites. In Virginia, White Rock Head</p>	
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		<p>Start partners with PACE adult day site for face to face intergenerational sessions, and Rivermont Early Learning Center partners with ARC of Central Virginia day site for adults with intellectual/developmental disabilities. All sites had requested increased programming to reach more participants and to offer more frequent sessions. Nutrition education and food access resources were also shared with families, as identified by Discovery Councils. The value of dining in and sharing family culture at meal times were shared in Ohio. In Virginia, a workshop on packing healthy lunches was provided to parents at one site. Fresh-grown produce from Unity Fridge Farm has been distributed at an Ohio childcare site, serving the families of 49 preschoolers, 48 older adults and 37 staff members. In Virginia, a SNAP-Educator, local church and FFLL collaborated to acquire food and prepared 320 snack bags for children just prior to the winter and spring breaks. FFLL collaborated with a local food bank to initiate and implement an on-going Food Satellite at one Ohio site, delivering monthly orders of meat, dairy, eggs, bread, fresh produce, shelf-stable foods, and special treats for young children. Raised bed gardens to accommodate wheelchairs and limited mobility have been built at two adult day sites. Since March when sites shuttered, the FFLL team in Virginia and Ohio worked to stay connected with participants and the partnering sites to respond to tangible needs. In Ohio, project staff worked with center staff who make weekly phone calls to older adults that had been participants in FFLL programming, addressing how the older adult is doing, strategies they are using to meet their needs, and any help they might need. A FFLL research team member summarizes notes for the week's calls for the entire group, which informs programming, such as connecting with the Clintonville Resource Center to deliver Necessary Bags. At one older adult participant site in Virginia, FFLL has provided shelf-sustainable foods each month to about 120 participants. The Virginia FFLL staff also partnered with</p>	
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		<p>a food distribution program to support nutrition education during food pick up days, as well as to supplement items to complement the food-bank and donated goods. The weekly food distributions serves approximately 150-210 people. At the same physical location, nutrition lessons are taught at the preschool site by teachers who are coached by FFLL staff. A final item of note is the the FFLL project received the 2020 Engaged Community Partner Award from the Engagement Scholarship Consortium to acknowledge the level of true, equitable and inclusive community-university partnership.</p>	
<p>40.</p>	<p><b>2020 Shop Smart, Eat Smart Continues to Support Food Retailers for Healthy Food Access</b></p>	<p><b>Relevance:</b> In 2020, there were 71,553 households that participated in the Supplemental Nutrition Assistance Program (SNAP). There were also 6,221 authorized retailers. According to the 2019 Behavioral Risk Factor Surveillance System (BRFSS), the prevalence of self-reported obesity was 31.9% in Virginia. The varied food landscape in Virginia, requires that promotion of healthy food be specifically tailored to the communities needs. Low-resource communities face an additional challenge in identifying healthy food items that are available and affordable for their families. Effective strategies are necessary to increase the real and perceived availability of healthy food in Virginia.</p> <p><b>Response:</b> Shop Smart, Eat Smart (SSES) is a Virginia Family Nutrition Program signature initiative that’s uses behavioral economic principles to drive the demand for healthy food options by low-resource populations. The program offers retail partners thirteen strategies in the categories of in-store marketing, technical assistance with environmental changes, as well as direct education and customer engagement. In 2020, we worked with 21 retail partners across the state and are continuously onboarding community champions to change the landscape of nutrition in Virginia.</p> <p><b>Impact:</b> This was the fourth year of Shop Smart, Eat Smart (SSES) implementation. The initiative entered into a second phase characterized by</p>	<p>Food, Nutrition, and Health</p>

		<p>partnership strengthening and increased strategy adoption compared to the initial phase of ground truthing and strategy piloting. Phase two was designed to better facilitate sustainable changes in the retail environment to support the initial aim by strengthening partnerships and increasing the ability to provide technical support with retail partners. FCS SNAP-Ed Agents received training on building non-traditional partnerships and facilitating media relations, as well as heard from other organizations guiding the work being done in healthy food access. FY 2020 also included the start of the monthly SSES Partner Spotlight; a monthly highlight of different partners across the state adopting innovative practices to provide healthy food access in their communities. In response to the COVID-19 pandemic, strategy implementation for the SSES initiative shifted to partner support and relationship strengthening as well as physically distanced customer engagement. Strategies included bi-weekly communication with retail partners, virtual food demonstrations, virtual nutrition education, and resource and information sharing. In FY 2020, 18 partnerships were maintained and 3 new partnerships were formed. There were 43 strategies implemented across all partnerships that spanned In-Store Marketing, Technical Assistance, and Direct Education and Customer Engagement; 16 of those were environmental change activities, 15 were systems change activities, and 12 were promotion activities. Three of the retail partnerships received media coverage varying from Social Media and Print Media.</p>	
<p>41.</p>	<p><b>2020 Physical Activity Access and Opportunities for SNAP-eligible Families</b></p>	<p><b>Relevance:</b> Physical activity provides numerous health benefits, reduces the risk of multiple chronic diseases, enhances and protects physical function as we age, supports mental health and brain function, and reduces the risk of premature death (U.S. DHHS, 2018). These benefits are cumulative with increasing activity levels; benefits begin to accrue as soon as a sedentary person increases their activity level, with significant benefits seen with 150</p>	<p>Food, Nutrition, and Health</p>

		<p>minutes of moderate intensity physical activity (or equivalent/combination of vigorous activity) and two sessions of full-body muscle strengthening activity each week. Additional health benefits are achieved with 300 minutes of moderate intensity physical activity (or equivalent/combination of vigorous activity).</p> <p>Just 21.8% of Virginia adults meet both aerobic and muscle strengthening physical activity guidelines, slightly higher than the national average of 20.3%. Rates are even lower for lower income populations: 16.4% of Virginians making \$25,000 - \$34,999, 16.1% of Virginians making \$15,000 - \$24,999, and just 14.1% making less than \$15,000 meet both guidelines, which tracks with national averages. For youth, 22.4% of Virginia high schoolers perform the recommended one hour of activity daily, less than the national average of 26.1% (CDC, 2017). Adult participants in FNP programs reported modest increases in physical activity due to direct education programs, moving from “sometimes” to “often” taking opportunities to be active. Older adults reported lower initial activity rates and smaller increases in activity after participation in FNP programs. Youth participants reported being active an average four days per week with no change pre to post (Virginia SNAP-Ed Annual Report, 2020).</p> <p><b>Response:</b> With the passage of the Healthy Hunger Free Kids Act of 2010, physical activity and policy, systems, and environmental supports were incorporated into the guidance for the Supplemental Nutrition Assistance Program - Education (SNAP-Ed). Since then, Virginia SNAP-Ed has primarily used direct education to promote physically active lifestyles. Beginning this year, Virginia SNAP-Ed is expanding its focus on physical activity at each level of the socioecological model. Virginia SNAP-Ed’s physical activity access and opportunities initiative launched by enhancing opportunities for physical activity for program participants, partners, and staff. Initial efforts focused</p>	
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		<p>on enhancing physical activity options for existing partnerships and settings, mainly the LEARN setting for youth and employees. An ongoing needs assessment has been planned to inform future physical activity initiative activities that are tailored to the preferences of potential participants and SNAP-Ed staff.</p> <p><b>Youth Physical Activity Challenge:</b> The physical activity challenge was launched in summer 2020 to encourage youth to achieve the recommended 60 minutes of physical activity each day. The challenge provided an opportunity for staff to maintain contact with partners and provide a virtual option for youth nutrition education.</p> <p><b>Physical Activity Breaks in the Classroom:</b> A toolkit of resources for teachers was developed to support the use of physical activity breaks during the school day for youth. Options for both virtual and in-person instruction were included in the resources. Activities offered options for reinforcing student learning, enhancing teamwork, and providing moderate intensity physical activity. Kits with equipment, including decks of cards, dice, physical activity cards with instructions, and sanitization instructions, are available for schools using physical activity breaks to enhance activities.</p> <p><b>School Employee Wellness Toolkit:</b> School employees are important role models for students, including for health behaviors. To encourage school employees to eat smart and move more, a toolkit was created for SNAP-Ed Agents to assist schools in offering employee wellness challenges while addressing the systems in LEARN settings to support healthy behaviors. Three options for challenges were developed, allowing for flexibility in delivery and responding to employee interests. The six week MyPlate challenge focuses on each food group, along with limiting sugar sweetened beverages; the monthly Move More challenge encourages increasing physical activity; and the eight week FitEx program is an evidence-based</p>	
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		<p>program used by Virginia Cooperative Extension to increase physical activity and fruit and vegetable intake. Each challenge includes goal setting and self-monitoring, along with premade newsletters providing additional educational content to support behavior change during the challenge.</p> <p><b>Introduction to Physical Activity for Agents training</b>          In this training, SNAP-Ed Agents were introduced to a framework for future physical activity initiatives, including an overview of common policy, systems, and environmental supports for physical activity, priorities for physical activity interventions in Virginia SNAP-Ed, partnership strategies for physical activity initiatives, and project planning steps for physical activity initiatives. The training also included instruction on conducting walkability and bikeability assessments using the tool created by the National Center for Safe Routes to School and policy scans, including common physical activity related policies in use by schools, partner organizations, and local governments.</p> <p><b>Mapping your Work training:</b> SNAP-Ed Agents were introduced to Geographic Information Systems (GIS) and instructed on the use of Google Maps as a method of data collection, analysis, and dissemination for their community work</p> <p><b>Results:</b></p> <p><b>Youth Physical Activity Challenge:</b> The virtual physical activity challenge reached 299 youth participants across 11 sites in play, learn, eat, and live settings. Partner organizations offering the physical activity challenge reported the following policy, systems, and environmental changes at their sites:</p> <ul style="list-style-type: none"> <li>• Established healthy food/beverage defaults (whole wheat bread, salad, or fruit instead of fries, water instead of soda, etc.)</li> </ul>	
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		<ul style="list-style-type: none"> <li>• Improved or expanded physical activity facilities, equipment, structures, or outdoor space</li> <li>• Improved quality of physical education</li> <li>• Improved quality of structured physical activity (non-PE)</li> <li>• Improvements in access to exercise or recreation facilities</li> <li>• Incorporated physical activity into the school day or during classroom-based instruction (not recess/free play or PE)</li> <li>• Increased or improved opportunities for physical activity during recess</li> <li>• Increased or improved opportunities for structured physical activity</li> <li>• Increased or improved opportunities for unstructured physical activity time/free play</li> <li>• Increased, improved, or incorporated physical activity/reduced sitting during usual, on-going site activities and functions</li> <li>• Policy to improve hours of operation of physical activity facilities to improve access/convenience</li> <li>• Policy to increase time spent doing physical activity</li> <li>• Policy to provide incentive to increase time spent doing physical activity</li> </ul> <p>SNAP-Ed Agents were trained to offer physical activity breaks in the classroom and employee wellness challenges for partner schools during the 2020 school year as part of a comprehensive policy, systems, and environmental approach to school wellness. SNAP-Ed Agents reported 15 teachers using physical activity breaks in the classroom and two schools implementing employee wellness challenges in FY2020.</p> <p><b>Introduction to Physical Activity for Agents training:</b> Agents were given an assignment to complete a walk- or bike-ability assessment in a local community within their coverage area, linked to an existing project, such as</p>	
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		<p>the area surrounding a Shop Smart, Eat Smart partner store, farmers market that accepts SNAP, or school partner, and create a report with recommendations for improvement that could be shared with community partners and stakeholders. Additionally, Agents were tasked with conducting a policy scan for physical activity policies in place with partner organizations or their hub community, and submit a report of their findings. These assignments were an opportunity to gain expertise and broaden their skills to support future physical activity needs assessments and interventions.</p> <p><b>Mapping your Work training:</b> After the training, the Agents mapped their community partners and in-progress projects, along with pertinent community assets, such as walking trails, farmers markets, etc, and/or GIS data, such as poverty rates by census block.</p> <p>One particular map created as a result of this training has been widely used during the Covid-19 pandemic. The COVID-19 pandemic left many individuals unemployed or underemployed and newly navigating the emergency food system. The pandemic also resulted in temporary closures to organizations offering food assistance, changes in agency operations, and the creation of new food resources in response to community need. All of these changes made navigating this system even more challenging as information on area food resources was not easy to find.</p> <p>The "Roanoke Area Food Resource Map" was developed to address this problem in the Roanoke Valley. The intention of the map was to connect individuals to food and help them stretch their food budgets. This interactive google map includes information on where people can apply for and learn about various food-related benefits, where people can receive discounts with an EBT or P-EBT card (e.g., farmers markets and select grocery stores), community gardens, food pantries, places people can go for free meals, and places where people can find information on food-related topics. Over 100</p>	
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		<p>area resources are included on the map, each with written details, contact information, and links to additional information when possible. Partnerships with school systems, local governments, food banks, healthcare organizations, and a variety of other organizations were essential to the development and distribution of this information. Partners regularly contribute to map content and updates and distribute the map through social media, email blasts, printed flyers, spreadsheets including map details, and inclusion of the map on organization websites and publications. In the first five months of publication online, the map was viewed over 10,000 times. Many community partners have shared that the map has been an extremely useful tool with which they can more easily direct individuals to food resources. Sam Lev, a partner with the Local Environmental Agriculture Project (LEAP) in Roanoke said, "I can say from experience that I've been using this spreadsheet and the map. Just had a call today from a gentleman looking for food for the weekend, and I sent him some options to follow up with from the list. Thankful for all the work you've put in on this, it's definitely helping!" The map can be viewed at <a href="https://roanoke.ext.vt.edu/FoodResources.html">https://roanoke.ext.vt.edu/FoodResources.html</a>.</p>	
42.	<p><b>2020 Lifelong Improvements through Fitness Together in Central District</b></p>	<p><b>Relevance:</b> Older adults represent a critical target population for increased health-enhancing physical activity behaviors, as the number of Americans 65 years of age and older will double in the next 40 years. Increased healthcare cost and decreased independence (and confidence) are linked to the deterioration of balance, flexibility, motor coordination, strength training, and cardiovascular as we age. To ameliorate this and improve mental health, the Physical Activity Guidelines for Americans (PAGA) recommend that older adults engage in two days of strength training, weekly moderate (150 minutes) or vigorous (75 minutes) aerobic activity, and balance training for improved mental and physical health.</p>	<p>Food, Nutrition, and Health</p>

		<p>Yet, only 20% of older adults meet the PAGA. Some reasons for this include lack of confidence in a physical activity regime and lack of accessible resources (space and instructor). Cooperative Extension has the unique ability to offer low-cost, high reaching programs for aging adults in their communities.</p> <p><b>Response:</b> In 2020, 17 participants from Lunenburg, completed 16 in person sessions. Primary outcome measures included functional fitness assessments of lower body strength, upper body strength, flexibility, endurance, and balance stations, as well as a survey for self-reported outcomes.</p> <p><b>Results:</b> Reported perceptions of program delivery were positive, including that participants were still meeting after the program. A number of participants had limited mobility including arthritis, and wheelchair use, or other illness. This group had a high participation rate, with only one participant resigning because of new health issue. Fourteen participants (86%) completed post program functional fitness assessments and 12 participants (88%) completed the post program survey. Highlights of reported program impacts include increased fruit consumption, increased number of days participating in moderate intensity aerobic activity, increased confidence in meeting physical activity recommendations, and increased social connections with relatives in person and group events. Data related to functional fitness, strength, and flexibility has been reported to the Virginia Tech PARCI Lab for review.</p>	
43.	<p><b>2020 Get Fresh: Type 2 Diabetes Prevention Program - Year 3</b></p>	<p><b>Relevance:</b> The 2020 CDC’s National Diabetes Statistics Report states that 13% of all adults have diabetes. Augusta Health’s 2019 Community Health Needs Assessment (CHNA) found that 16.5% of Augusta County, Staunton City, and Waynesboro City adults have been diagnosed with either Type 1 or Type 2 diabetes. This is a 2.6% increase compared to the 2016 CHNA and ranks this region’s diabetes prevalence as higher than the national average.</p>	<p>Food, Nutrition, and Health</p>

		<p>The 2019 CHNA found that middle age, low-income adults have higher rates of diabetes compared to their peers, indicating a need for health intervention with this population. Data on youth diabetes is limited, however the CDC (2017) reports that family history is a prominent contributing factor to diabetes diagnosis. Programs offered by the Virginia Family Nutrition Program (FNP) teach low-income youth and adults how to make healthier food choices based on their resources for optimal health and growth. These programs teach valuable cooking and health skills that assist with preventing and reducing the prevalence of chronic diseases, including Type 2 diabetes.</p> <p><b>Response:</b> Get Fresh is a collaborative partnership between VCE FNP, Augusta Health, Blue Ridge Area Food Bank, Project GROWS, Murphy Deming School of Health Sciences, and Waynesboro Public Schools to provide nutrition education experiences for the students and families at William Perry Elementary and Wenonah Elementary. This is the third year of the initiative to prevent and reduce the risk of Type 2 Diabetes among these families. VCE FNP facilitates the nutrition education program called Families, Food, and Fun, a 4-week comprehensive afterschool program for students and their caregivers. The Eating Smart Being Active curriculum is used with the adults, while OrganWise Guys and Choose Health is taught to students in kindergarten through 5th grade. Kindergarten and 1st grade teachers at the schools use the Fresh Fruit and Vegetable Program (FFVP) for weekly classroom tastings. Augusta Health supplies volunteers and programming costs as needed. Blue Ridge Area Food Bank funds all food items for Families, Food, and Fun. Waynesboro Public Schools provides the meeting space for the program and recruits families for the classes. Project GROWS supplies Harvest of the Month tastings throughout the school year and hosts field trips to their education farm in Augusta County. Murphy Deming School of</p>	
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		<p>Health Sciences assists Augusta Health in collecting biometric data for the Kindergarteners and 3rd grade students in the fall and spring</p> <p><b>Results:</b> The Families, Food, and Fun program occurred February 6th, 13th, 20th, and 27th at William Perry Elementary with twelve students and ten adults participating. The students rotated in three 30-minute stations, including nutrition education, physical activity, and recipe preparation for one component of the meal. The parents participated in nutrition education and recipe preparation for two components of the meal the first hour and a half of the program. The students and parents then ate the meal together for thirty minutes and were supplied take-home groceries. We received a total of \$3,245.50 of in-kind donations from Blue Ridge Area Food Bank in food supplies for the program. Adult evaluations show that 90% of families increased their fruit and vegetable consumption because of the program. Students evaluations show that in the previous day, 50% of students ate at least two servings of fruits and vegetables daily and 50% participate in physical activity every day for 60 minutes or more. Due to the schools closing in March, post-biometric screenings were not conducted this year, as they were in the past. PSE changes adopted at this site include expanded use of local produce (systems) and policy for increasing nutrition education or cooking activities (policy). A virtual version of Get Fresh started in November 2020 with new materials uploaded to the school site each month. The curriculum is managed by Augusta Health and consists of FFVP, Harvest of the Month videos, and FNP recipes and handouts. Metrics from the site show 581 students are engaged with the curriculum on average 11 minutes each week. The material attachments have been downloaded 11,081 times as of December 2020. In July 2020, Augusta Health was awarded a \$100,000 USDA Farm to School Grant to expand Get Fresh to additional schools in Waynesboro and purchase a mobile café for the schools to utilize for meal</p>	
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		distribution and education. The mobile unit will be operational in March 2021 and VCE FNP will be involved with the education portion of this effort.	
44.	<p><b>2020 Virginia Residents with Diabetes Improve Their Diets, Increase Physical Activity and Improve Blood Sugar Control with the Help of Cooperative Extension</b></p>	<p><b>Relevance:</b> Diabetes is a significant public health issue. It is the seventh leading cause of death in the US, and the leading cause of kidney failure, lower-limb amputations, and adult-onset blindness. In 2015 there were 30.3 million U.S. adults living with diabetes (9.4% of the population), and an additional 1.5 million are diagnosed every year.<sup>1</sup> Annual medical costs of diabetes in the US in 2017 were \$237 billion, and medical expenses for people with diagnosed diabetes were 2.3 times higher than for people without diabetes. Over 837,000 Virginia residents (12.2% of the population) have diabetes, incurring medical costs of over \$6.2 billion annually and \$2 billion in lost productivity. Management of diabetes to control blood sugar significantly decreases the medical complications of diabetes, thereby reducing associated morbidity, mortality, and medical costs. Risk of complications is reduced by 21 to 40% for each percentage point decrease in glycosylated hemoglobin (A1c), a marker of blood glucose control. Recommended A1c level for people with diabetes is 7.0%.</p> <p><b>Response:</b> Balanced Living with Diabetes (BLD) is an evidence-based, collaborative, community-based type 2 diabetes lifestyle change program that has been evaluated through multi-year projects funded by the National Institutes of Health (NIH) and the United States Department of Agriculture (USDA). BLD emphasizes self-efficacy, goal setting, self-regulation, and social support to encourage improvement in self-management of diabetes. Virginia Cooperative Extension (VCE) Family and Consumer Sciences (FCS) Agents coordinate the program, recruit participants, identify local registered dietitians or certified diabetes educators to teach the curriculum, and provide food demonstrations to build participants’ self-efficacy for making recommended dietary changes. Four weekly sessions are followed by a</p>	Food, Nutrition, and Health

		<p>reunion class held approximately two months after the last weekly session. The reunion class provides an opportunity for program evaluation and feedback to participants on change in dietary and physical activity behavior and blood glucose control.</p> <p><b>Results:</b> The NIH and USDA studies showed a clinically significant reduction in A1c of over 0.5% for BLD participants with baseline A1c over 7.0%. Approximately one third of these participants reduced their A1c to below 7.0%. BLD participants significantly improved knowledge about recommendations for diabetes self-management and lifestyle (diet and physical activity). Statistically significant improvements in lifestyle habits included using a method to control carbohydrate intake more frequently, greater daily consumption of five servings of fruits and vegetables, and more days per week with aerobic exercise. Although BLD does not emphasize weight management, over half of BLD participants lost weight.</p> <p>VCE is meeting a significant need for diabetes self-management support through the Balanced Living with Diabetes Program. FCS Agents continue to offer the program through local funding with support from VCE nutrition and public health specialists. In Bedford County in 2020, : Due to Covid-19 and social distancing, a pilot virtual BLD program was created and implemented. The program was conducted via 12 one-hour live Zoom sessions. Eight participants registered with four completing all 12 sessions. The pilot BLD program was offered during November and December which are busy months and difficult for individuals to find the time to commit to a program which is based on changing life-time habits of eating and exercise in midst of all the holiday meals with rich, high calorie foods included and limited time for exercise. With Covid-19, local gyms were closed and some participants had full responsibility for managing at-home virtual learning for young children and grandchildren. Over 70 volunteer hours are reflected in the</p>	
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		<p>success of this pilot virtual BLD. An added \$1,960.00 investment in our community.</p>	
<p>45.</p>	<p><b>2020 Emergency Food System Partnerships Pilot FNP Strategies for Healthy Food Access with Clients</b></p>	<p><b>Relevance:</b> Prior to the COVID-19 pandemic Virginia’s food insecurity rate was 9.9%; approximately 842,870 Virginians. With the devastating burden of the COVID-19 pandemic exacerbating the availability of resources, that number has skyrocketed to 22%. Emergency food relief sites provide temporary assistance to food insecure individuals and families by supplying food at no cost to the client. Their presence is an important piece of the food environment and serve as another resource to promote healthy food consumption. Food insecurity is associated with food related chronic diseases and strategies should be actively pursued to mitigate this correlation.</p> <p><b>Response:</b> This year, FNP began the planning process for creating a comprehensive menu of strategies for food bank and community pantry partners, to aid them in addressing the intersection of public health and hunger. Strategy piloting has included both promotional and education material distribution, kitchen skill and food demonstration visual aids, as well as environmental nudge resources for client guidance at the pantry site. Training and technical assistance was offered to pantry partners to aid in their site transition to a new food distribution model; Client Choice.</p> <p><b>Impact:</b> This year, two of the seven food banks have begun piloting FNP branded environmental nudges, linking clients to FNP nutrition education, distributing FNP recipes, directing clients to FNP food demonstrations, and providing extensive feedback from the field of what technical assistance is needed. In addition to regional partnerships, more local partnerships have been formed by the SNAP-Ed agent have made local partnerships with 9 pantry sites and have begun implementation of healthy pantry activities including 9 system change activities, 4 environmental change activities, and</p>	<p>Food, Nutrition, and Health</p>



		<p>5 promotion activities. The activities included: using shelf labels with messages of nutrition information to highlight healthy foods and beverages; cues, such as signs or floor arrows, to guide clients to healthy foods and beverages; bundling of food items to make a healthy recipe, and food demonstrations and short-term nutrition education.</p>	
<p>46.</p>	<p><b>2020 Covid-19 Food Safety Videos</b></p>	<p><b>Relevance:</b> In response to a request from the community a series of food safety videos to be used as training modules for First Responders, community leaders, and volunteers for the purposes of food preparation and distribution in the safest and most efficient manner under USDA and CDC guidelines was created. Meals and essential needs would be distributed to school age children, faith-based groups during the Covid-19 Pandemic. As the need to provide meals for school children, community members and 60+ population developed and community outreach programs needed to set up and establish food safety protocol for the safe delivery and handling of essential and meals to the community, the videos were utilized as training for these faith-based and school groups.</p> <p><b>Response:</b> Six five-minute videos were produced on Best Practices, Food Safety and Sanitation. The videos were shared by the Bedford County Fire and Rescue and Bedford County Police Department with registered volunteers from the community who were interested in distributing food to families in need. The video series provided a useful system geared to quickly meet the evolving needs of the community during the Covid-19 Pandemic. We felt, after a discussion of resources to provide for citizens, that we could provide these tools in succinct format to be most efficient and target areas of most need. Therefore, a single page has been drafted containing reliable information that could be shared with each family/individual that are visited by emergency responders. A website was created for the same purposes containing helpful information for citizens and families. The information was</p>	<p>Food, Nutrition, and Health</p>

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		<p>accessible via the Bedford County Extension website, Facebook, and by contacting the Bedford County Extension office. Website link is <a href="https://bedford.ext.vt.edu/">https://bedford.ext.vt.edu/</a> and Facebook group: Virginia Cooperative Extension--Bedford County. Resources for citizens and families included on the website, facebook, and through direct contact with Bedford County Extension office consisted of: Preventative Measures and FAQs, Activities for kids, Resources for parents and Food and Exercise. Flyers containing this information were distributed to multiple Bedford county departments.</p>	
<p>47.</p>	<p><b>2020 - VCE Expands Home Food Preservation virtually during COVID-19 pandemic</b></p>	<p><b>Relevance:</b> The number of consumers preserving foods at home continues to increase as more consumers emphasize greater control over what they eat and where their food comes from. Failure to adequately preserve foods in the home can result in foodborne illness. Foodborne botulism is a severe form of food poisoning. Most of these cases are associated with improperly processed home-canned food. Just one case of botulism can cost \$1,680,903 related to medical services, deaths, lost work, and disability. In order to prevent illness, it is essential that consumers follow validated recipes when preserving foods at home. Extension educators are recognized as a credible resource for home food preservers.</p> <p><b>Response:</b> In previous years, Virginia Cooperative Extension agent(s) across Virginia provided hands on food preservation trainings in person. This year, due to COVID-19, these classes were developed into a class called Home Food Preservation, which consisted of 6 different modules: 1) The Science Behind Home Food Preservation, 2) Boiling water bath canning, 3) Pressure Canning, 4) Freezing, 5) Dehydration, and 6) Vegetable Fermentation. The course was developed during May and June and made available to the public on July 15th. The course was asynchronous, allowing participants to move through the content at their own pace. It was made available to the</p>	<p>Food, Nutrition, and Health</p>

		<p>participants upon registration and remained available until the end of the year.</p> <p><b>Results:</b> Since July 15th, 107 aspiring home food preservers completed the Home Food Preservation online virtual training. All of the participants that filled out follow up evaluations indicated knowledge improvement. Many of the respondents stated that the class either reinforced safe canning knowledge, or changed practices that they were using to become safer. The most notable improvement included a participant that previously used an unsafe method to preserve vegetables and meats creating a risk for botulism. As a result of this course, that respondent reported changing their practices to use a safe method. Additionally, the following direct response from a participant was sent: “I just completed the Home Food Preservation Virtual Program. I learned so much! A lot of great and useful information. The videos were great too. I recently got a Electric Water Bath Canner. I am looking forward to using it. I am open to any upcoming virtual classes for food preservation, herb gardening, vegetable container gardening, water bath class showing different foods that can be canned, beginner sewing classes, making soap. Hats off to everyone that participated in the making of this Virtual Program!!!”</p>	
48.	<p><b>2020 Extension Master Gardeners partner with Foodbank of Southeastern Virginia to Fight Hunger</b></p>	<p><b>Relevance:</b> In 2019/20, Virginia had the 10th lowest poverty rate (9.9%) in the country; the national average dropped to 10.5 percent. (www.census.gov) and 34 million people in the U.S. fell below the Poverty line in 2019. Slightly over 18% of Norfolk residents currently live below the federal poverty level. In neighboring Portsmouth, 18.5% of the population lives below the federal poverty levels. (http://www.census.gov/). (www.city-data.com/poverty/poverty-Portsmouth-Virginia.html) Across the commonwealth, these people are highly concentrated in inner cities and along the state's southern and southwest borders, with growing clusters in</p>	Food, Nutrition, and Health

		<p>suburban areas. A more complete understanding of economic deprivation or quality of life is reflected by access to health care, labor market opportunities and hunger. On average 10.1 percent of households in Virginia were food insecure from 2015 to 2019. ( talk Poverty.org)</p> <p><b>Response:</b> Under the guidance of Agriculture and Natural Resources Horticulture Extension Agents in the Chesapeake, Norfolk, Virginia Beach and Portsmouth units, Extension Master Gardener volunteers addressed the food shortage through a multi-faceted approach: direct donation of fresh garden produce-contributions to the Foodbank of Southeastern Virginia; creation of demonstration gardens to teach people how to grow their own food; participation in the Plant a Row for the Hungry Program, and healthy food preparation information to area residents. Produce was grown and regularly donated to the Foodbank. Demonstration gardens were cultivated in each city, where volunteers solicited and received donations for seeds and other essential supplies.</p> <p><b>Results:</b> In 2020, donations of fresh, locally grown produce exceeded 16,500 pounds. These contributions to the Foodbank helped provide nutritious meals to 14,000 individuals, allowing for the assembly of nutritious meals for \$.32. During the last fiscal year, the Foodbank of Southeastern Virginia provided 14.2 million meals (almost 17.1 million pounds of food) to area residents.</p>	
49.	<p><b>(2020) Sustainable Food Production Systems Program Development</b></p>	<p><b>Relevance:</b> It has been projected that the world population will reach 10 billion by 2050. In order to provide enough food, meat production must increase by 70%. However, our current agricultural practices are not sustainable enough and more than 40% of our food is wasted through the food supply chain from farm to fork.</p> <p><b>Response:</b> A multi-disciplinary program was developed at VT focusing on alternative proteins, bioprocessing, food safety and digital ag.</p>	Food, Nutrition, and Health

		<p><b>Results:</b> This program was able to support the US ag system and several startup companies. A strong collaborative program was developed with other schools in CALS, College of Engineering, IALR, and College of VetMed at VT, as well as VIMS, UC Davis, VSU, University of Houston, Cals polytech, Tufts University, MIT, University of Washington, Washington State University, and University of Wyoming.</p> <ul style="list-style-type: none"> <li>• One of the startup raised 5M and expand its marketing from CA to FL, and MD, as well as Chile.</li> <li>• Other startup raised 2M and was able to expand its production facility by entering into aquafeed.</li> </ul>	
50.	<p><b>The Center for Food Systems and Community Transformation: Operating at the nexus of food, community, and society to explore, build capacity, and catalyze new food systems possibilities through a values-based and systems-approach</b></p>	<p><b>Relevance:</b> From a historical lens, food systems work takes on a number of issues, politics, and priorities. Transformation is an emerging system-thinking concept to frame the complexity underpinning the social, cultural, and biological systems that make up the whole. Together, food systems and community transformation requires considerable thought and actions stemming from numerous fields and disciplines from across the academy, including but not limited to health and nutrition, education, community development, human development, horticulture, agroecology, economics, sociology, anthropology, engineering, landscape architecture, planning and policy, political science, and the arts for social change. Community-university partnerships play a significant role to cultivate a resilient food system that nourishes healthy people, empowers communities, revitalizes local economies, conserves natural resources, and fosters human dignity as a core value. Now more than ever we need a diversity of perspectives, strategies, and actors to create resiliency in our food systems and communities. We also need to develop better ways to connect, create, and evaluate our efforts for sustainable impact. It is with this in mind that the Center for Food Systems and Community Transformation within the College of Agriculture</p>	Food, Nutrition, and Health

		<p>and Life Science at Virginia Tech was created. This Center adds a dynamic element to existing efforts nationally and internationally with the goal of integrating and prompting the values and practice of diversity and inclusivity across the tripartite land grant mission for the public good of engagement, research, and education. To that end, the Center, with a focus on transformation as a core concept and goal driving our food systems thinking, is working to make Virginia Tech a national leader among peer institutions who currently host food and farming-focused centers.</p> <p><b>Response:</b> The Center for Food Systems and Community Transformation is an Extension/Outreach center based in the College of Agriculture and Life Sciences (CAL S). The Center works at the nexus of food, community, and society to explore, build capacity, and catalyze new food system possibilities through a values-based and systems-approach. The Center’s aims are trifold. One aim is to develop partnerships, outreach, educational opportunities across Virginia Tech and the Commonwealth for improved collaboration among a diversity of stakeholders to address the complexity of food system issues with emphasis on social equity and community sustainability. A second aim is to conduct community-based research initiatives that address historical and emergent issues related to healthy food access, farming systems viability, ecological sustainability, and producer/food worker justice and quality of life. Third, an aim is to support university teaching and learning opportunities by leveraging existing, and creating new, service-based curriculum in the area of food, farming, and community transformation. The goals and activities of the Center emphasize a number of food system needs and issues, specifically: 1) the environmental sustainability of our food systems; 2) the quality of life of food system workers; 3) issues of food access, justice, and human health; and 4) the</p>	
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		<p>emancipatory potential for socially just food systems in advancing the human condition in Virginia and beyond.</p> <p><b>Results:</b> The Center has hosted seven public talks that have been attended by 453 participants who represent university faculty and students, Extension field faculty, and community stakeholders. Within the extension mission, the Center offers educational programming such as learning circles, community sessions, and extensive resource archiving and sharing. Since March of 2020, the Center has hosted eight learning circles as well as a four-part conversation series on the theme of soil, conservation and place. In total, attendance for the learning circles and conversation series totaled 744. Since April 2020, the Center has offered five annotated articles (news, op-eds, and journal literature) on COVID-19 in the food system as well as equity and justice by people across the globe. There are now over 160 annotated articles compiled in the news archive of the Center webpage. Additionally, when the Pandemic hit, the Center took leadership in developing a compendium, “COVID-19 and Food Systems” a collection of updated news, public and scholarly literature, position papers, and VCE and partners resources (locally, regionally, and nationally) that address or relate to the impacts COVID-19 has brought to the food system. These resources are cataloged on the Center website. Further, VCE’s Community, Local, and Regional Food Systems (CLRFS) Program Team collaborated with the Center to create and disseminate this collection of partnership and timely resources. The Center also led a project called ‘Soil Conservation and Place’ (Community Viability &amp; Agua Fund, 2018-2021) (\$70,000). This project aims to deepen community understanding of the importance of agriculture and soils to a sense of place, community, and culture. The project highlights the distinct voices and diverse farms of Virginia’s agricultural community who are protecting and conserving soil and water resources through a narrative</p>	
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		<p>inquiry framework. Through this project, the Center created a series of twelve videos highlighting participating farmers’ stories of conservation and place-making, submitted a journal publication, and hosted a four-session conservation series with farmer interviewees (mentioned above). Further, Virginia Tech’s Center for Food Systems and Community Transformation, worked in collaboration with Extension’s Community, Local, and Regional Food Systems (CLRFS) Team, the Virginia Beginning Farmer and Rancher Coalition (VBFRC), Virginia Fresh Produce Food Safety Team, and community project partners, to initiate and secure a 2018 USDA-Agricultural Marketing Service Local Food Promotion Program implementation grant: Catalyzing Agricultural and Educational Resources to Move the Local Food Value Chain Needle in the Shenandoah Valley and Northern Piedmont Regions of Virginia (USDA-AMS-LFPP funded, 2018-2021) (\$496,839). The Center also partnered with the Civic Agriculture and Food Systems Pathway Minor Capstone course by working with Sara Deason and Rachel Hall, seniors in the minor, to complete their capstone projects: ‘Food Systems Curriculum at Virginia Tech’ and ‘Stories of the Food System in the Pandemic.’ The Center has also been featured in five invited talks and presentations including a presentation at one virtual conference, a talk at the National Farm Medicine Center, two invited lectures in Virginia Tech classes, and one interview with a local news station. The Center has also generated a number of publications relevant to community, local, and regional food systems and COVID-19 and the food system. Two peer-reviewed journal articles, a repository of white papers, and a series of vignettes that capture themes of food systems resilience and mutual aid during the pandemic have been produced in 2020. The Center has also partnered with the VCE Community, Local, &amp; Regional Food Systems Program Team to: conduct a two-part in-service series titled “Food &amp; Farm Connections” designed to train and equip VCE personnel about the food</p>	
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		<p>value chain, food system coordination, and connecting people and businesses in Virginia’s food value chain; to create the COVID-19 and the Food System Compendium mentioned above; to address statewide efforts on food access, farmer and food business support during disruptions in food systems; to support resource development in partnership with the Virginia Food System Council and Farmers Market Associations, and; to consider long-term solutions to existing gaps, disproportionate disparities and outcomes to low-wealth communities, and how we get food into the system. Additionally, the Center cultivated a community of 28 Center Fellows and has developed partnerships with the VT Community Change Collaborative (CCC), the Cambium Collective, and the Virginia Food Systems Council. The Center also engages an audience of 4,013 followers on the Virginia Farm-to-Table Facebook page and 46 followers on the Center twitter handle created just a few months ago. The listserv consists of 243 members from Virginia and beyond. People also engage frequently with the content on the Center website with over 12,710 pageviews in 2020.</p>	
<p>51.</p>	<p><b>The AgrAbility Virginia Program: Enhancing the quality of life of farmers and agricultural workers with disabilities across the Commonwealth of Virginia.</b></p>	<p><b>Relevance:</b> While agriculture is an important industry in Virginia, a new generation of farmers is slow to join the work force. While the young people are hesitant, those who are actively engaged in farming want to continue farming as long as they can. As a result the average age of farmers in Virginia has been steadily creeping up. Currently, the average age of farmers in Virginia is 59.5 (VDACS, 2014) compared to the national average of 57.1 (USDA, 2007a). At the same time it is interesting to note that about one-third of these farmers in Virginia are over 65. As they get older, they will be dealing with impaired vision and hearing, slow reaction times, and many other age related disabilities such as arthritis.</p> <p>All of these factors may adversely affect their ability to operate the equipment safely, resulting in primary or secondary injuries. To protect</p>	<p>Food, Nutrition, and Health</p>

		<p>these aging farmers and their families, it is critical to create and sustain services and programing directed to support these communities and individuals.</p> <p><b>Response:</b> For 17 years, AgVA has successfully assisted farmers with disabilities to continue to farm safely, effectively, and productively, with dignity, while also fostering the prevention of secondary farm injuries with attention given to mental health and farm stress as a priority concern. The program is currently administered in partnership among Virginia Tech (Led), Virginia State University, and Easter Seals UCP North Carolina and Virginia. AgrAbility Virginia also integrates its services into Virginia's rehabilitation and agricultural service delivery systems to provide direct assistance for farmers and farm workers. This is facilitated through the Rural Rehabilitation Partnership. We assist clients as a direct result of diverse and focused marketing, networking and educational programs used in promoting AgrAbility Virginia.</p> <p>A 2019-2023 USDA AgrAbility Grant was awarded in 2019 to address new and expanded program goals through education, networking, direct assistance, and marketing: The overall aim of this statewide initiative is to assist farmers, and their families, to continue working safely and productively with dignity. We do this through education, direct service, networking, and marketing objectives. AgVa will accomplish these objectives with increased effectiveness to address at least four significant issues:</p> <ol style="list-style-type: none"> <li>1) Provide enhanced direct services for historically underserved and vulnerable farming communities with disability in Virginia through 1862-1890 LGU partnership</li> <li>2) Provide targeted education and rehabilitation assistance in hard-to-reach settings through VSU's Mobile Agricultural Education and Demonstration Program</li> </ol>	
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		<p>3) Develop community-based pilot program to address farm safety and farm-related stress as critical mental and behavioral health issues impacting farmers and farm families</p> <p>4) Develop new educational resources and outreach for affordable flexible robotic devices as an emergent assistive technology strategy for farmers with disabilities.</p> <p><b>Results:</b> With support of the USDA NIFA AgrAbility grant award, the 2019-2023 AgrAbility Virginia Program is eager to increase the scope and depth of our services and resources for farmers and agricultural workers who call AgrAbility for assistance with emphasis on socially disadvantaged farmers beginning farmers and military farmers. New and stronger partnerships and organizational relationships are being sought to increase outreach to these audiences through support of the Virginia Beginning Farmer and Rancher Coalition Program and the Farmer Veteran Coalition. We are also planning for long-term program sustainability through the development of an advisory group. This advisory group was enhanced in 2016 and is leading the effort to guide our sustainability for future work. Easters Seals continues to provide direct assistance to farmers across the Commonwealth (aprox. 35-40 cases currently). Grant award: USDA, NIFA AgrAbility Program. AgrAbility Virginia. \$722,063.</p>	
52.	<p><b>Technical assistance supports the sale of safe foods in Virginia. (2020)</b></p>	<p><b>Relevance:</b> Food processors and retail food establishments need dependable help troubleshooting problems related to the safety and quality of their products. Understanding and meeting the requirements of food laws and regulations and correcting deficiencies during state and/or federal inspections can be a challenge for food processors and retail food businesses that do not have the in-house expertise to undertake this task. If these problems or deficiencies are not resolved, processors may be at risk by not being able to sell their products.</p>	<p>Food, Nutrition, and Health</p>

		<p><b>Response:</b> Through Face-to-Face meetings, phone calls, and emails, Virginia Seafood AREC assisted 8 entities including food processors, retail food establishments and state regulators in resolving issues related to lack of HACCP plans and sanitation documentation, inadequate monitoring documentation, deficient implementation of manufacturing practices (GMPs), and lack of understanding and implementation of food regulations.</p> <p><b>Results:</b> The support provided by the Seafood AREC helped solve food safety deficiencies that kept companies in compliance with regulatory requirements to sell safe and quality products while keeping their cost to a minimum. Resolved issues allowed companies to manage risks and sell their products. State regulators were able to discuss and enhance understanding of food safety regulations. The emphasis on prevention is consistent with the proper implementation of the FDA HACCP plan systems and the Food Safety Modernization Act (FSMA) and reflects the FDA’s current GMP requirements, as well as new requirements for Hazard Analysis and Risk-based Preventive Controls.</p>	
53.	<p><b>LIFT 2020: Promoting strength, flexibility, and balance to improve the functional fitness of aging adults.</b></p>	<p><b>Relevance:</b> Falls are among the most common problems faced by older adults with impaired balance and mobility. One third of adults age 65 and older and fifty percent of adults age 80 and older will fall annually. As adults age and become more sedentary, they lose muscle mass, balance, and flexibility. However, strength-training interventions may alleviate the burden of muscle weakness leading to falls and allow them to safely perform daily functional tasks. Older adults may consider participating in a strength-training program to maintain their independence and avoid burdening their families, be socially connected, and perform everyday tasks such as walking up the stairs or putting away groceries. Only 17% of older adults meet physical activity recommendations. In many cases, older adults do not have access to physical activity facilities (at a nominal cost) or they often lack the</p>	Food, Nutrition, and Health

		<p>comfort or capacity to perform the exercises. Lifelong Improvements through Fitness Together (LIFT) was developed to fill these gaps and help aging adults meet the Physical Activity Guidelines for Americans.</p> <p><b>Response:</b> LIFT is now offered in five states: Virginia, Pennsylvania, North Carolina, Arkansas, and Wyoming. LIFT has simple core elements that ensure that it works:</p> <ul style="list-style-type: none"> <li>• Deliver the program to groups of people by a trained and enthusiastic community member</li> <li>• Integrate evidence-based strategies for short-and long-term behavior change</li> <li>• Harnessing the group: competition, accountability, group distinctiveness, goal setting</li> <li>• Recognizing the individual: goal setting, self-monitoring, feedback</li> <li>• Discuss and apply simple fruit/vegetable consumption strategies</li> <li>• Use evidence-based exercise sequence where participants stay in their range of motion and have fun!</li> </ul> <p><b>Results:</b> In 2020, LIFT shifted to an online format to account for COVID-19. Results include training an additional 122 instructors, and providing updated training for existing instructors so that they can move the program online. Due to the rapid, dynamic, and ongoing nature of program delivery, individual-level impacts of LIFT for 2020 are not yet available. Other results, however, include that the open-access program repository for LIFT became available and is housed at <a href="http://parcilab.org/lift">parcilab.org/lift</a>. The repository contains all paper and electronic versions of data collection tools, training slide decks, and all program materials which are updated as needed. In order to produce an annual national impact statement, all state LIFT coordinators will be asked to complete a five minute report—based on Adaptome20 and RE-AIM7—in October of each year. This included 17 items</p>	
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		<p>on a 5-point Likert scale within RE-AIM dimensions. Items included “Our recruitment strategies ensured that all eligible people felt supported to attend” and “Our instructors reported adaptations”. Open-ended questions were based on the categories of the Adaptome20 and inquired whether adaptations were made, such as “Have you made any adaptations to who can deliver the program?”. In 2020, Pennsylvania and North Carolina administrators had positive perceptions across each dimension of RE-AIM in their annual report; however, North Carolina shared that they did not collect 6-month outcome data. This is unsurprising as they were trained just before COVID-19 and were delivering the intervention online. Wyoming did not complete the survey due to LIFT discontinuance.</p> <p>As with many other public health interventions, LIFT was adapted to virtual delivery. In the summer 2020, a pilot of the feasibility and impact of delivering LIFT via web conferencing was conducted in VCE and resulted in 11 participants with a weekly attendance average of 4.7(+1.4) participants. Through process evaluation, autoethnographic field notes, and participant tracking during the program, it was identified that the group dynamics strategies needed adaptation and that video/audio use by participants facilitated discussion. In the future, online LIFT delivery will encourage use of video/audio and additional outside-of-class contact with the instructor through social media posts, emails, and optional phone calls (since in-person rapport was challenging to establish).</p>	
54.	<p><b>Ensuring continued Impact of Virginia Cooperative Extension on Diabetes</b></p>	<p><b>Relevance:</b> Diabetes is one of the most common chronic diseases in the United States, and is associated with well-documented adverse health outcomes. It affects over 30 million Americans (10.5% of the U.S. population). An additional 84 million people have prediabetes, approximately 30% of whom will develop diabetes in the coming five years. Diabetes has emerged as a significant risk factor for severe coronavirus</p>	<p>Food, Nutrition, and Health</p>

		<p>disease 2019 (COVID-19) caused by infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). People with COVID-19 and diabetes are more likely to be admitted to the ICU, require mechanical ventilation, and succumb to the disease.</p> <p>Virginia Cooperative Extension is meeting the need for diabetes prevention and control education through two evidence-based lifestyle-change programs, The Diabetes Prevention Program, and the Balanced Living with Diabetes Program. The social distancing restrictions implemented in early 2020 to control the spread of SARS-CoV-2, reduced the ability of Extension Faculty to offer these critical programs to their service community at a time when prevention and control of diabetes was even more important.</p> <p><b>Response:</b> The Diabetes Prevention Program and Balanced Living with Diabetes Programs have been supported by the Food, Nutrition and Health program team and associated Extension Specialists through annual curricula trainings, standard evaluation tools and centralized data collection, a platform with program materials, and acquisition of program grant funding. In early 2020, the social distancing restrictions in response to the COVID-19 pandemic made in person diabetes programs impossible. A core team of VCE Extension faculty leveraged grant funds from the Virginia Department of Health and mobilized to create the online platforms and provide the training necessary to allow Extension agents to offer these vital programs to Virginia residents through distance learning.</p> <p><b>Results:</b> We developed an all-in-one participant program platform for both the VCE DPP and BLD that serves the needs of the participants and Extension Lifestyle coaches alike. For the longer 12-month VCE DPP we developed a robust platform using Canvas and Zoom. For the shorter, six-session BLD program we developed an easily accessible Google site platform linked with Zoom. Systems for program marketing, registration, communication, and</p>	
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		<p>data collection were established. Seven VCE Lifestyle Coaches were trained on the new VCE DPP platform and systems, and three programs were successfully marketed and begun by the end of 2020. Forty-one individuals with prediabetes from three VCE service communities are improving their health through these DPP programs. Two additional VCE DPP programs are being marketed for early 2021. Two Extension faculty from Central Virginia pilot tested the VCE BLD distance learning platform with two at risk groups, uninsured and older adults with diabetes. These programs reached four low income residents and four older adults with critical diabetes lifestyle management skill building. Feedback from the Extension Lifestyle coaches and program participants is being gathered to improve the platforms and processes for both programs in preparation for expansion across the Commonwealth.</p>	
<p>55.</p>	<p><b>Creating Capacity for Food Demonstration Video Production Among Virginia Cooperative Extension Family and Consumer Science Faculty</b></p>	<p><b>Relevance:</b> The COVID-19 pandemic has required a rapid adjustment to the way Extension programs are offered to ensure ongoing access to these vital programs by Virginia residents. Many programs have been adapted for conduct in the distance learning format, including several lifestyle change programs conducted by Family and Consumer Science agents that use food demonstrations as an important learning tool. During a listening session with FCS Extension Faculty in early 2020, the Food, Nutrition, and Health Program Team identified skill building in virtual and video recorded food demonstrations as a need for Extension Faculty and their programs.</p> <p><b>Response:</b> The Food, Nutrition, and Health Program Team formed a practice group of interested FCS Extension Agents to gain skills in developing food demonstration videos, establish standards of production, and produce videos that could be used with Extension programs. Equipment and software licenses for video production and publication was acquired for faculty interested in producing food demonstration videos.</p>	<p>Food, Nutrition, and Health</p>



		<p><b>Results:</b> Eleven FCS Extension Faculty participated in the practice group over a period of eight months starting in May, 2020. A process for producing food videos was established that included developing a food demonstration outline and video shot list. The outline included objectives, key food safety, nutrition, purchasing, and cooking messages, and recipe nutritional analysis. The shotlist outlined the various video and still camera shots that would make up the video, and accompanying narrative. Recipes that are part of existing lifestyle change programs were selected for food demonstration video production. The group created a food demonstration video playlist on Youtube to house food demonstration videos titled, "From Our Home To Yours". Five practice group members chose to produce the videos. Eleven food demonstration videos were produced and posted to the Youtube playlist between August and December of 2020. In that time, the videos have 1131 views, and are being used to support the Extension distance learning diabetes education programs.</p>	
56.	<p><b>Buzz, Body, &amp; Bites – An Extension Resource for Actively Aging Adults and the Community Organizations that Serve Them.</b></p>	<p><b>Relevance:</b> COVID-19 rapidly spread all over the world. Older adults are at higher risk of suffering negative outcomes from the virus and the social distancing strategies in place to avoid spread of the disease. Adults 65 years and older make up 80% of deaths from COVID-19 in the US, and are experiencing higher levels of anxiety, depression, and loneliness, poor sleep quality and significantly reduced physical activity. Loneliness and feelings of social isolation in older adults is linked to cognitive impairment, poor immune function and heart health, as well as increased mortality. Social connectedness is key to older adult health and well-being. Participating in social activities stimulates sensory systems and improves emotional and physical well-being. The reduction of activities provided by community organizations serving older adults in response to COVID-19, has placed many</p>	Food, Nutrition, and Health

		<p>older adults socially disconnected and at risk of the negative health consequences associated with that.</p> <p><b>Response:</b> Various strategies to increase cognitive engagement and physical activity have been recommended to address the radical change in the lifestyle of elderly people due to COVID-19 that is negatively impacting their mental and physical health. The Food, Nutrition, and Health Program team developed a monthly newsletter for older adults, Buzz, Body, &amp; Bites, that provides information in four areas that the reader can apply to their lives. These include topics of current interest (Buzz), balance and strength building exercises (Body), a healthful recipe (Bites), and a mind game. Three members of the FNH Team serve as Editors who direct production of the newsletter, and content is provided by experts from Extension, VT, and VSU. Peer-reviewers evaluate the newsletter for content and form prior to distribution. The newsletter is distributed to organizations that serve older adults including Area Agencies on Aging (AAA), Senior Centers, and Medicare insurers, as well as directly to older adults served by Extension agents.</p>	
57.	<p><b>Bilingual training increases understanding and proper application of food safety practices for the production of food and seafood.(2020)</b></p>	<p><b>Relevance:</b> Maintaining a trained workforce is vital for the prevention of foodborne illnesses. Foodborne illnesses (FBI's) significantly affect public health in the United States. The Center for Disease Control estimates that each year about 1 in 6 Americans (or about 48 million people) gets sick and 3,000 die of foodborne illness. Food processors and food retail companies must keep abreast and attain an understanding of food-safe handling practices, emerging pathogens, new research, and regulations so that they can remain in business and market safe and quality food products. In addition, the Food Safety Modernization Act (FSMA) added training requirements, thus increasing the need for education of personnel at all levels of the food company. The key to preventing FBI's is to fully understand and effectively applying safe food handling practices and</p>	Food, Nutrition, and Health

		<p>manufacturing procedures to prevent the contamination of foods before it reaches the consumer. Research studies suggest that language barriers can make it difficult for employees to understand and apply these basic safe food handling and manufacturing practices.</p> <p><b>Response:</b> Seafood AREC provided 7 food safety training and workshops to 43 clients representing 13 companies from the food industry and retail industry, including regulators and VCE agents in Virginia and nationwide. Five (5) of the training and/or workshops, were delivered in Spanish. Training and/or workshops provided included Seafood HACCP, Good Manufacturing Practices (GMP's) and personal hygiene practices. Some trainings were provided in person and others were provided virtually. Certificates issued prove compliance with knowledge requirements of Food Safety and Application of HACCP and sanitation procedures as per FSMA requirements. One company was issued a Letter of Training as evidence that their employees have received training in the principles of food safety and personnel hygiene practices. These training and workshops are supported in part by Virginia Sea Grant funds.</p> <p><b>Results:</b> Participants from the food processing industry and the retail industry can use the gained knowledge to prevent the contamination of the foods they process or serve to the public. Regulators can use the attained knowledge to evaluate food safety plans and sanitation procedures. Providing trainings and workshops in Spanish ensures proper understanding and application of food safety systems by the high portion of Hispanics employees working in the food industry in Virginia. Thru training and education, VCE supports ongoing efforts by industry and government agencies to prevent and reduce the risk of foodborne pathogens from the farm to table continuum. The emphasis on prevention is consistent with the</p>	
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		<p>FDA HACCP plan systems and FSMA and reflects the FDA’s current GMP requirements.</p>	
<p>58.</p>	<p><b>2020 Virginia Virtual Farm to Table Series Encourages Interdisciplinary Collaboration While Illuminating VCE’s role in Food Security</b></p>	<p><b>Relevance:</b> COVID-19 unleashed an unprecedented amount of disruption in the food supply chain. While grocery store sales have increased by 10% in 2020, many families that found themselves spending a lot more time at home began cooking more. As problems in long food supply chains were highlighted in the media, direct farm marketers saw an increase of 30-50% in sales. Online sales of home goods and garden products grew by 63% from mid-March to mid-May, indicating an increased interest in homeowners producing their own food. Later in the year, a national jar and lid shortage indicates that home gardeners were successful and desired to preserve their bounties. All of this renewed interest in cooking and producing food at home, presented Virginia Cooperative Extension with an excellent opportunity for an interdisciplinary program. The goals of this program would be to 1) emphasize VCE’s role in food security, 2) showcase the diversity of agriculture in Virginia, 3) promote agricultural literacy, 4) promote good nutrition and food safety, and 5) raise awareness about the breadth of VCE’s work.</p> <p><b>Response:</b> In mid-April, a survey was sent out to Virginia Cooperative Extension faculty and staff to gauge interest in collaborating on the Virginia Virtual Farm to Table program. Later that month a meeting was held with members of the Community, Local, and Regional Food Systems and Food and Health Program Team to start defining the goals and structure of the program. Shortly after, all those interested in collaborating on this program met to finalize a schedule of sessions. Sessions began in mid-May and were held weekly through mid-October on Zoom and Facebook Live. 21 sessions in total were offered with each session focusing on a different food produced in Virginia. Sessions topics included strawberries, hydroponic</p>	<p>Food, Nutrition, and Health</p>

		<p>salad greens, honey, shiitake mushrooms, turkey, dairy, beef, herbs, potatoes, tomatoes, chicken, sweet potatoes, eggs, wine, lamb, pork, fish, peanuts, ornamentals, grains, pumpkins, and ostrich. Sessions were about 40 minutes long, with the first portion focusing on food production and the second portion focusing on cooking that food. Virtual farm tours, information for home gardeners, cooking demonstrations, nutrition information, and food safety tips were common components of each session. A landing page was created on the Virginia Cooperative Extension Website to house information about the program, session recordings, and featured recipes. Recordings were edited, captioned, and posted on the Virginia Cooperative Extension YouTube Page.</p> <p><b>Results:</b> 61 people collaborated on this series including 20 4-H Extension Agents, 15 Extension Specialists, 10 Agriculture and Natural Resources Extension Agents, 6 Producers, 3 Family and Consumer Sciences Extension Agents, 3 SNAP-Ed Extension Agents, 3 Family Nutrition Program Assistants, and 1 Master Gardener. The series had a total attendance of 1041 people in the Zoom sessions. There were an additional 4120 views on Facebook and 1471 views on YouTube. In post-session surveys 99% of respondents indicated that they learned something about agriculture production from the session they attended. 97% of respondents indicated that they were likely (60% extremely likely and 37% somewhat likely) to use the information presented in the session that they attended. When asked what they liked most about the webinar attended, participants stated, “very well done / liked the easy to follow format and the expertise of the presenters,” “Great diversity of presenters and information, the videos were extremely engaging. The presenters were really knowledgeable when giving responses at the end,” and “ I really liked how it incorporated agents/specialists from multiple program areas – very well done.”</p>	
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**5. Natural Resources, Environment, and Climate Change**

Corresponding VCE Program Teams:

- Natural Resources Management
- Natural Resources, Environmental, and Agricultural Literacy

No.	Title or Activity Description	Outcome/Impact Statement	Planned Program Name/No.
59.	<p><b>COVID-19 Affects U.S. Aquaculture and Aquaponics Industries and Availability of Seafood for U.S.</b></p>	<p><b>Relevance:</b> The COVID-19 pandemic severely impacted many agricultural supply chains and the related economics. Consumers were affected by loss of availability of a broad variety of food sources. The spring season is one of the most important seasons for the aquaculture and fisheries markets. The extent of the market impact for the fisheries and seafood industries was studied by Virginia Tech researchers at the Virginia Seafood Agriculture Research and Extension Center, in partnership with The Ohio State University Extension.</p> <p><b>Response:</b> A survey was designed to capture and quantify the impact of COVID-19 on fish farms, aquaculture, and aquaponics operations and related industries. The survey was broadly distributed and first quarter (March 23-April 10) and second quarter (June 29 to July 17, 2020) results were summarized. The initial survey responses represented approximately 18% of all U.S. aquaculture operations.</p> <p><b>Results:</b> In the initial survey assessment, 90 percent of the businesses were impacted by the pandemic and 78% had been impacted during the second quarter. Eighty percent of respondents had private contracts canceled for the 2020 year; 9% had government (state or federal) contracts canceled. In the second quarter, 43% reported additional contracts were cancelled.</p>	<p>Natural Resources, Environment, and Climate Change</p>

		<p>Losses ranged from \$1,000 to \$5million in the initial quarter. Initially, businesses reported they had between 1-3 weeks to make a decision whether to lay off employees, with 33% indicated they had already laid off employees at the time of completing the first survey completion. 27% had terminated employees during the second quarter. Lost sales were reported by 74% of the respondents during the second quarter and 22% had less than 1 month of cash available to cover operating expenses. Over half (56%) indicated that Federal assistance would help their farm or business survive. Nearly half (48%) of the respondents applied for Paycheck Protection Program and/or reported applications for an Economic Injury Disaster Loan (33%) and/or a personal bank loan or line of credit (19%). The spring 2020 closure of dine-in restaurants and the stay-at-home orders during the initial stages of the pandemic severely impacted market channels. The study is continuing over the next year to see the short- and long-term impacts of the pandemic on the aquaculture industry.</p> <ul style="list-style-type: none"> <li>• VT News Story: New Survey finds COVID-19 disrupts 90% of aquaculture industry and spurs economic loss nationwide. <a href="https://vtnews.vt.edu/articles/2020/05/Aquaculture_expert.html">https://vtnews.vt.edu/articles/2020/05/Aquaculture_expert.html</a></li> <li>• Results: <a href="https://www.arec.vaes.vt.edu/arec/virginia-seafood/research/Impacts_of_COVID19.html">https://www.arec.vaes.vt.edu/arec/virginia-seafood/research/Impacts_of_COVID19.html</a></li> <li>• VCE publication: Impacts of COVID-19 on U.S. aquaculture, aquaponics, and allied businesses: Quarter 1 Results. <a href="https://www.pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/AAEC/aaec-218/AAEC-218.pdf">https://www.pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/AAEC/aaec-218/AAEC-218.pdf</a></li> </ul>	
60.	<p><b>An Integrated Approach to Improve Drought Tolerance of Peanut</b></p>	<p><b>Relevance:</b> Drought is a major concern for peanut production in the Virginia-Carolina (VC) region. This is because only 10% of the land is irrigated; spring is usually wet so that plants produce large amounts of biomass but shallow roots; soil is sandy, has little water holding capacity and it dries up fast in a</p>	<p>Natural Resources, Environment, and Climate Change</p>

		<p>matter of days after a summer rain. Under these circumstances, plants undergo drought stress much faster and more severe than in dry regions where they can acclimate to drought to withstand it better. In addition, no research on peanut drought tolerance has been done in the VC region and there is no knowledge on what drought mechanisms to breed for and what current cultivars and lines are more drought tolerant. In this project, Virginia Tech researchers addressed this deficiency. They analyzed traits that improve transpiration and photosynthesis, at least in other crops, and sought knowledge on how these traits are related to actual yield under drought in peanut. This information provides peanut producers not only with identified lines and cultivars with better drought tolerance that growers can grow on droughty soils, but also with the physiological mechanisms that offer peanut drought tolerance in this region for breeders to use as surrogate traits for yield improvement under drought.</p> <p>The long-term goal of the project to increase peanut yield and quality through the development of cultivars with improved drought tolerance through an integrated physiological approach that will result in development of near-term solution for peanut breeding.</p> <p><b>Response:</b> As part of the Peanut Variety Quality Evaluation multistate project (S1079), this project cooperated with breeders and researchers from North and South Carolina. Peanut breeders and researchers studied limited-transpiration trait in peanut genotypes to characterize the potential for developing drought tolerant peanut varieties. They also used rain out shelters in fields and different irrigation levels to simulate drought and non-drought conditions.</p> <p><b>Results:</b> Based on the limited-transpiration trait in peanut genotypes, they have characterized several peanut genotypes that have potential for developing into drought tolerant peanut varieties. Two germplasm lines</p>	
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		<p>have demonstrated improved drought and heat tolerance based on the rain-out shelter irrigation (controlled water) studies. Additional genotypes are in seed expansion phase to increase seed availability for additional testing.</p> <ul style="list-style-type: none"> <li>• This project is funded, in part, by the Virginia Agricultural Experiment Station, Hatch Multistate project S1079, and AFRI Award Number: 2017-78001-26495 in the Critical Agricultural Research and Extension (CARE; Program Code A1701)</li> <li>• Balota, M., 2020. Agronomic recommendations and procedures. In 2020 Peanut Production Guide. Virginia Tech and Virginia Coop. Ext. Publ. SPES177NP. 128 p. <a href="https://www.pubs.ext.vt.edu/SPES/SPES-177/SPES-177.html">https://www.pubs.ext.vt.edu/SPES/SPES-177/SPES-177.html</a> Revised annually, 2008-2020.</li> <li>• Balota, M., Cazenave*, A. B., Dunne, J., and Anco D., 2020. Peanut Variety and Quality Evaluation results I: 2019 agronomic and grade data*. Virginia Tech and Virginia Coop. Ext. Publ. SPES-93NP. 41 p. <a href="https://www.pubs.ext.vt.edu/SPES/SPES-93/SPES-93.html">https://www.pubs.ext.vt.edu/SPES/SPES-93/SPES-93.html</a>.</li> <li>• Balota, M., Cazenave*, A. B., Dunne, J., and Anco D., 2020. Peanut Variety and Quality Evaluation results II: 2019 quality data*. Virginia Tech and Virginia Coop. Ext. Publ. AREC-64NP. 45 p. <a href="https://www.pubs.ext.vt.edu/AREC/AREC-64/AREC64.html">https://www.pubs.ext.vt.edu/AREC/AREC-64/AREC64.html</a>.</li> <li>• Website: <a href="https://www.arec.vaes.vt.edu/arec/tidewater/programs/peanut-variety-evaluation-and-crop-physiology.html">https://www.arec.vaes.vt.edu/arec/tidewater/programs/peanut-variety-evaluation-and-crop-physiology.html</a></li> </ul>	
61.	<p><b>Sustainable Precision Animal Agriculture Testbeds in Virginia</b></p>	<p><b>Relevance:</b> Precision animal agriculture (PAA) testbeds present a rich environment for cyber-physical systems (CPS) research to address the potential for technologies to assess efficiencies and economic value. Animals, individually, are complex organisms that require constant nutritional adjustment, yet they are social beasts with herd behavior that emerges from the collective. For issues of nutrition, health, productivity and</p>	<p>Natural Resources, Environment, and Climate Change</p>

		<p>efficiency, animal agriculture must treat both the individuals and the collective, making it ideal for the science and application of CPS principles. With growing global awareness of the negative effects of livestock production on non-renewable and renewable resources, concurrent with the negative effects of global population growth and the need to feed more mouths, the transformational impact of CPS on the largely unexplored realm of precision animal agriculture is enormous. The challenges associated with adoption of new technologies requires exploration of basic science and translational research, exploring the complex relationship between individual animal and herd behaviors on agriculture systems efficiency, while demonstrating its potential on the specific area of dairy farm management with the goal of improving sustainability and efficiency.</p> <p>At Virginia Tech, researchers in animal nutrition and reproduction, computer science, electrical and computer engineering, agricultural economics, and environmental science and engineering are teaming up to develop a network of SmartFarms and study the complexity of technologies and digital agriculture.</p> <p><b>Response:</b> Four testbed locations have been established at the Virginia Tech Agricultural Research and Extension Centers (AREC) in Middleburg, VA (equine; beef), Raphine Virginia (Shenandoah Valley AREC; beef), in Glade Springs, VA (Southwest Virginia REC; sheep), and at the dairy farm near the main campus (Kentland Farm, Blacksburg, VA). These locations have been established to allow networking of sensors and data, including implanted sensors, wearable sensors, smart scales, feeders, and watering systems, and other strategies for monitoring activities and environmental conditions.</p> <p><b>Results:</b> Researchers have conducted several animal trials to develop databases for derivatization of models predicting animal feeding requirements from performance and sensor data. They have designed and</p>	
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		<p>generated wearable sensors for use in gathering additional, more precise individual animal information to inform models that can be more successful in making recommendations to improve efficiency of livestock with diets. They have worked on the development and refinement of LoRA-based sensors for livestock and tested sensors for animal motion/behavior, animal proximity, animal location, body temperature, respiration, heart rate and the local environmental conditions. They are in the process of developing models based on these developments to further the prediction and precision monitoring of individual dairy cattle to better understand the profile associated with more efficient cattle.</p> <ul style="list-style-type: none"> <li>• This project is funded, in part, by the Virginia Agricultural Experiment Station, and NIFA AFRI Project 2018-67007-28452 in the Cyber-Physical Systems program (code number A7302)</li> <li>• Website: <a href="http://caia.cals.vt.edu">caia.cals.vt.edu</a></li> </ul>	
62.	<p><b>Machine Learning Translate Dancing Plants to Showcase Plant Health</b></p>	<p><b>Relevance:</b> Stress situations, such as drought, influence plant health and resilience. Recognizing plant genetic improvements to address stressors requires novel methods to observe subtle phenotypes influenced by targeted genes. In a novel strategy, a Virginia Tech team consisting of a plant geneticist and molecular biologist, a computer vision and machine learning expert, a leader in sonification techniques representing movement data through sound, and an expert in 3-D imaging, are studying the micro-movements (dance) of plants to biotic and abiotic stresses. This project is one step forward in discovering the unknown biological functions of plant genes to guide future crop breeding and promote soil and plant health and growth. This research will provide technological and foundational science for advancing controlled environment agriculture (vertical agriculture).</p> <p><b>Response:</b> The team used an agricultural robot, named Farmbot, equipped with an automatic imaging system, to collect plant movement data in an</p>	<p>Natural Resources, Environment, and Climate Change</p>

		<p>intelligent indoor agriculture laboratory. The team is using computer vision techniques, processed and translated the recorded image data into 3-D imaging. The image data was processed into sounds, with a goal of identifying desirable sound vibrations or treatments to identify plant stress or health. Pepper plants are one of the plants that were investigated.</p> <p><b>Results:</b> We have successfully established a plant imaging system and developed algorithms for computer vision analysis. The plant motion patterns were successfully extracted and converted to audio sound by sonification. The parts of the plant that are easiest to track are the corner-like points on leaves and stems, which can be found after moving with little ambiguity. They discovered that the center region of a leaf can be confused with many points. The next step is to collect videos of plants grown under either stressed and healthy conditions, analyze the sonification data, and identify the unique signature related to the plant growth and health.</p> <ul style="list-style-type: none"> <li>• This project was funded by the Virginia Agricultural Experiment Station and the Virginia Tech Institute for Creativity, Arts, and Technology; and by PowerLands Inc.</li> <li>• The Sound of Plants Dancing; <a href="https://vtnews.vt.edu/articles/2020/08/cals-sound-of-movement.html">https://vtnews.vt.edu/articles/2020/08/cals-sound-of-movement.html</a></li> <li>• <a href="https://www.pilotonline.com/news/environment/vp-nw-virginia-tech-plants-research-20200907-nxqybwfvdzggdlwwt54k7vzkfq-story.html">https://www.pilotonline.com/news/environment/vp-nw-virginia-tech-plants-research-20200907-nxqybwfvdzggdlwwt54k7vzkfq-story.html</a></li> <li>• <a href="https://icat.vt.edu/projects/2019-2020/major/dancing-plants.html">https://icat.vt.edu/projects/2019-2020/major/dancing-plants.html</a></li> <li>• <a href="https://liberalarts.vt.edu/news/articles/2020/08/sound-of-plants-dancing.html">https://liberalarts.vt.edu/news/articles/2020/08/sound-of-plants-dancing.html</a></li> </ul>	
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<p>63.</p>	<p><b>Trade-off and balance between U.S. dairy production of greenhouse gases and protecting American dietary intake of essential nutrients.</b></p>	<p><b>Relevance:</b> The dairy industry in the United States is massive. It supplies dietary requirements to the vast majority of the population. This same industry also contributes approximately 1.58 percent of the country’s total greenhouse gas emissions. A commonly suggested solution to reduce greenhouse gas output has been to reduce or eliminate this industry in favor of plant production. A team of Virginia Tech researchers, in cooperation with the U.S. Dairy Forage Research Center, which is part of the USDA, considered the balance between decreased greenhouse gas emissions as related to reduced milk production and the resulting nutrient availability in U.S. diets based on various removal scenarios.</p> <p><b>Response:</b> Three removal scenarios were evaluated: (1) depopulation, in which consumers stopped consuming dairy products and resulting in the depopulation of animals; (2) current management, in which cattle management would remain the same and the milk produced would be exported or directed toward products other than human food; and (3) retirement, in which cattle numbers would be reduced, through retirement, to a number that could be supported by available pastureland with consideration of nutrient management planning. The team looked at environmental and human dietary (nutritional) impact.</p> <p><b>Results:</b> Land use considerations were important in all three scenarios. Using the current management scenario, nutrient supplies in the human diet decreased but greenhouse gas emissions were unchanged, as expected. The depopulation scenario created nearly 12% decrease in emissions, with limited effect on overall nutrients but significant decrease in several essential nutrients (9 of the 39 nutrients evaluated). The depopulation scenario created over 7% decrease as compared to current emissions and all 39 human dietary nutrients in the evaluation decreased. Overall, the study suggested that the extreme response of removing dairy cattle from US</p>	<p>Natural Resources, Environment, and Climate Change</p>
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		<p>agriculture would have a nominal effect (reduction of greenhouse gas emissions by 0.7%) and would have significant effect on essential nutrients in the diets of Americans.</p> <ul style="list-style-type: none"> <li>• This project was supported by Dairy Management Inc.</li> <li>• <a href="https://vtnews.vt.edu/articles/2020/12/cals-white-research.html">https://vtnews.vt.edu/articles/2020/12/cals-white-research.html</a></li> <li>• <a href="https://www.adsa.org/About-ADSA/Media/October-12-2020-Removal-of-dairy-cows-from-the-United-States-may-reduce-essential-nutrient-supply-with-little-effect-on-greenhouse-gas-emissions">https://www.adsa.org/About-ADSA/Media/October-12-2020-Removal-of-dairy-cows-from-the-United-States-may-reduce-essential-nutrient-supply-with-little-effect-on-greenhouse-gas-emissions</a></li> <li>• Liebe DL, Hall MB, White RR. 2020. Contributions of dairy products to environmental impacts and nutritional supplies from United States agriculture. J. Dairy Sci. 103(11): 10867-10881. <a href="https://doi.org/10.3168/jds.2020-18570">https://doi.org/10.3168/jds.2020-18570</a></li> </ul>	
64.	<p><b>VT Turfgrass Team Provides Multiple Virtual Educational Opportunities in 2020</b></p>	<p><b>Relevance:</b> COVID-19 protocols eliminated all in-face research field days so the VT Turf Team had to develop and deliver virtual outreach and educational opportunities for its industry clientele.</p> <p><b>Response:</b> The VT Turf Team developed and led multiple virtual field day and training opportunities for all Virginia turfgrass industry segments in 2020. Multiple live Q/A events were hosted for/with the Virginia Golf Course Superintendents Association, the Virginia Sports Turf Managers Association, and the Virginia Sod Growers Association. The VT Turf Team also offered three virtual research field days for Golf Turf, Sports Turf, and Lawn/Landscape/Sod Production in the fall of 2020. This involved the development of dozens of 5-8 minute video presentations describing the research and its results, many featuring the VT Turfgrass Team graduate students. These videos are now hosted on the newly developed VT Turf YouTube channel</p>	<p>Natural Resources, Environment, and Climate Change</p>

		<p>(<a href="https://www.youtube.com/channel/UCB1t8yy3W8L964AUb2brd_w">https://www.youtube.com/channel/UCB1t8yy3W8L964AUb2brd_w</a>) and the new VT Turfgrass website (<a href="https://turf.spes.vt.edu/">https://turf.spes.vt.edu/</a>). The VT Turf Team also participated in and led the development and delivery of numerous Master Gardener Volunteer training programs, Certified Pesticide Applicator Recertification programs, Certified Fertilizer Applicator programs, training for Virginia Nutrient Management Plan Writer certification and recertification programs, and support of the Virginia Master Gardener College and Virginia 4H Summer Youth programs.</p> <p><b>Results:</b> Approximately 150 turfgrass industry professionals from across the United States registered and participated in the virtual field days delivered during October and November, and the postings on the YouTube channel and VT Turf website have been (and continue to be) viewed hundreds of times. VT Turf Team members facilitated dozens of professional meetings for its industry and state agency colleagues, serving over 150 Master Gardener Volunteers in specific turfgrass training and over 400 industry professionals that participated in either virtual Pesticide Applicator Recertification or Certified Fertilizer Applicator training programs.</p>	
65.	<p><b>VA Urban Nutrient Management Program Communication and Outreach to Homeowners through the Master Gardeners and Healthy VA Lawn Programs</b></p>	<p><b>Relevance:</b> As the Dept. of Conservation moves forward to meet WIP 2025 acreage goals for urban lands addressed by nutrient management plans (363,000 acres), one of the largest challenges remains with accounting for private homeowner lawns. To help breach the gap in communication, outreach, and implementation among homeowners, VCE developed the Healthy Virginia Lawns (HVL) program.</p> <p><b>Resolution:</b> Developed by Virginia Cooperative Extension and administered through the Master Gardener’s program, Healthy Virginia Lawns is an educational program for homeowners who are interested in learning how to sustainably manage their lawns and implement best management practices to improve water quality. Through these programs, homeowners get access</p>	<p>Natural Resources, Environment, and Climate Change</p>

		<p>to personalized lawn care recommendations based on site-specific soil nutrient analysis. Master Gardeners have access to joint training programs and short courses with Virginia Tech and Dept. of Conservation to better establish expertise for turf and urban landscape management. Communication between the HVL program coordinators for each participating county and DCR has been established to allow for improved training and discussion, and has resulted in annual reports tracking acreage and plan numbers from the HVL programs.</p> <p><b>Results:</b> In 2020, the Healthy Virginia Lawn Program reported a total of 2,156 plans being developed for homeowners, with plans spanning a total of 844 acres of urban landscape. The current numbers for 2020 were generated from 9 counties throughout Virginia. In recent years, reports also started to include the number of acres under plans created by certified nutrient managers. HVL coordinators reported a total of 266.6 certified acres in 2018, 137.43 acres in 2019, and 198.92 acres in 2020. As these programs continue to grow, further inclusion of the certified nutrient management program should be pursued.</p>	
66.	<b>Disaster Resilience and Risk Management</b>	<p><b>Relevance:</b> According to the National Oceanic and Atmospheric Administration, during the year 2020, there were 22 weather/climate disaster events with losses exceeding \$1 billion each that impacted the United States. These events included one drought event, 13 severe storm and flooding events, seven tropical cyclone events, and one wildfire event. Overall, these events resulted in the deaths of 262 people and had significant economic effects on the areas impacted. The mountainous terrain of Southwest Virginia is not exempt from natural disasters. Disasters affect people across all walks of life, and creating resilience and restoring communities requires collaboration among a wide range of researchers, practitioners, and stakeholders.</p>	Natural Resources, Environment, and Climate Change



		<p><b>Response:</b> The Virginia Tech Disaster Resilience and Risk Management (DRRM) graduate program coordinator reached out to Virginia Cooperative Extension Administration in July 2020 to discuss partnership opportunities in the area of emergency preparedness and disaster management. DRRM offers a transdisciplinary experience to Virginia Tech graduate students in civil and environmental engineering, urban affairs and planning, public and international affairs, geosciences, business information technology, and other disciplines to develop new modes of thinking and problem solving. The DRRM teaches that, since disaster resilience is a community issue, it is critical that academic researchers learn from and collaborate with on-the-ground practitioners and stakeholders to develop approaches rooted in context-specific needs and resources. For their Fall 2020 graduate seminar, the DRRM class project involved researching flooding in Roanoke and Tazewell Counties. Due to the relationship between Virginia Cooperative Extension agents and their local communities, it was determined that the VCE-Tazewell and VCE-Roanoke Extension offices were ideally positioned to assist Virginia Tech faculty and students in the DRRM program making community connections that would enhance their understanding of the local situation(s). Four Extension agents in two communities joined forces with the university to acquire personal interviews, administrative insights, and local records of destruction from flooding. As part of this semester project, the students explored past flooding events from communities of Roanoke and Tazewell County to get a rural and urban perspective through available literature (news stories, public data, etc.). Students met with Extension agents, local officials and flood victims on two separate occasions during the seminar to learn from their perspectives and experiences. They discussed future flooding events of issues localities were most and least prepared to control. The goal was to look across several resources from multiple</p>	
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		<p>disciplinary perspectives and synthesize them into a discussion about the locality's responses to recent flooding events and mitigation strategies for the future.</p> <p><b>Results:</b> The Project took an interdisciplinary approach to understand how communities prepared for, responded to, recovered from, and mitigated flooding impacts, taking into consideration issues related to government, the public, physical and economic conditions, as well as issues such as mental health, public health, fish and wildlife, etc. They analyzed an overview of flooding in each of the two communities from the perspective of city/county officials, Extension agents and local citizens. Local officials used the knowledge gained to developed mitigation plans for future flooding events generating ideas for financial assistance through grants and local appropriations. The students were able to see beyond "book knowledge" to hear directly from stakeholders impacted by these events. This hands-on research generated perspective shifts in flood management and important leaps in understanding the human factor involved in these disasters. The experiences were synthesized and findings reported back to university departments, Extension agents, and local officials. A local news station prepared a feature news presentation about this program titled "Putting Natural Disasters Under a Microscope"</p> <p><a href="https://wvva.com/2020/11/17/putting-natural-disasters-under-a-microscope/">https://wvva.com/2020/11/17/putting-natural-disasters-under-a-microscope/</a> The true outcome of this project will be seen locally in future flooding events of these two communities and the knowledge gained by this program will be shared throughout the world. The success of the DRRM/VCE partnership has led to additional conversations about how DRRM can help build resilience in local communities through other partnerships with Virginia Cooperative Extension.</p>	
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<p>67.</p>	<p><b>2020 Social Media Plays Vital Role in Engaging Woodland Owners During a Pandemic</b></p>	<p><b>Relevance:</b> In Virginia, we rely on private families to keep over 10 million acres of woodlands healthy and productive. Landowners are faced with many challenges to include: invasive species, severe weather, unpredictable markets, and rapid ownership turnover. Mitigating these challenges is essential to maintain the productivity and profitability of the Old Dominion’s forests worth \$21 billion annually and to provide ecosystem services (e.g., such as clean water and wildlife habitat, valued at \$16 billion annually). While most owners want to keep their woodlands healthy and productive, many are not certain how to accomplish these things. Both this uncertainty and the overwhelming amount of readily available information may lead to inaction. In addition to these traditional barriers to implementation of sustainable management, 2020 prevented most in-person programming.</p> <p><b>Response:</b> In order to keep woodland owners engaged and learning, Extension turned to developing new virtual learning opportunities. Some programs were simply transitioned to virtual delivery. A new initiative was designed, developed and delivered to engage new and already connected landowners in brief, engaging, weekly videos on a variety of topics relevant to Virginia Landowners. The VFLEP Team, along with the four VCE Forestry District and Natural Resource Extension Agents, quickly learned basic videography skills and rotated weekly for video delivery and team support. These #FifteenMinutesintheForest videos were presented to a live audience every Friday at noon and subsequently posted on the VFLEP YouTube Channel (<a href="https://www.youtube.com/c/VirginiaForestLandownerEducationProgram">https://www.youtube.com/c/VirginiaForestLandownerEducationProgram</a>).</p> <p><b>Results:</b> In 2020, 32 videos on a variety of topics were developed to include: tree identification, invasive species, herbicide application, and American chestnut research. The videos have had almost 7,000 views and resulted in 351 new subscribers to the VFLEP YouTube Channel (up from 6 subscribers</p>	<p>Natural Resources, Environment, and Climate Change</p>
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		<p>in March of 2020). Viewers spent over 638 hours watching, with an average view time of 5.33 minutes.</p> <p>Evidence of increased and broadened engagement is also reflected in the corresponding (VFLEP) Facebook page grew from 867 followers in 2019 to 1,298 in December of 2020. Total reach went from 98 people in January 2020 to 1,499 in December 2020.</p>	
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**6. Strengthening Virginia Families**

Corresponding VCE Program Team:

- Human Development

<b>No.</b>	<b>Title or Activity Description</b>	<b>Outcome/Impact Statement</b>	<b>Planned Program Name/No.</b>
68.	<p><b>Harding Street Urban Agriculture Center Feeds Food Desert Communities during COVID-19 Pandemic's Hard Times</b></p>	<p><b>Relevance:</b> The onset of COVID-19, has increased food insecurity in the United States. Communities that were already struggling with food insecurity issues have been hit even harder by the pandemic. With unexpected school closures, children from low income households reliant subsidized school meals are nutritionally challenged missing the free breakfast, snack and lunch they would have received if they had attended school during the week. The city of Petersburg, Virginia is a designated USDA food desert that was already struggling with high rates of food insecurity. To address the immediate COVID-19 food insecurity needs of Petersburg's low-income communities, the Harding Street Urban Agriculture Center established through USDA-NIFA AFRI funding and operated in collaboration with Virginia State University Cooperative Extension and community</p>	<p>Strengthening Virginia Families</p>

		<p>partners has coordinated efforts to help feed low-income families during the COVID-19 pandemic.</p> <p><b>Response:</b> In response to community requests for a healthy food distribution location accessible to food desert residents living in and around the low-income Harding Street neighborhood, the Harding Street Urban Agricultural Center opened its doors to become a community food hub that sources, processes, and distributes food. In collaboration with feeding program partners within the city of Petersburg. Joining forces with the Petersburg Healthy Options Partnerships (PHOPs) program, Petersburg Healthy Community Action Team, the City of Petersburg, Petersburg Public Library and Healthy Living and Learning Center, Petersburg City Public Schools, River Street Farmers Market (Petersburg, VA), Kingdom Covenant Empowerment Center, the Hope Center Food Pantry, local daycare centers, the Episcopal Church and the Under Ground Kitchen, the Harding Street Urban Agricultural Center has coordinated efforts to feed families and improve access to healthy food in the wake of the COVID-19 pandemic.</p> <p><b>Results:</b> As a result of coordinated community efforts to assist in distributing food during the COVID-19 pandemic, 11,321 food-insecure, at-risk, low-income individuals (school age children, elderly, and families) received healthy foods with a total retail value of \$112,786.00.</p>	
69.	<p><b>Innovative POP! Market Distributes Discounted Local Farm Produce Boxes to 120 Low-Income Families during the COVID-19 Pandemic</b></p>	<p><b>Relevance:</b> Improving the food system in Petersburg, Virginia has become even more important in light of the COVID-19 pandemic. The city of Petersburg ranks #1 out of 133 Virginia counties and independent cities with 42 percent of adult residents suffering from adverse health due to obesity. The city of Petersburg Virginia is classified as a food desert where low income and minority residents do not have access to fresh, wholesome foods (USDA, 2020). Since the emergence of COVID-19, demand for healthy food options in Petersburg has increased.</p>	<p>Strengthening Virginia Families</p>

		<p><b>Response:</b> With almost one in three low income families in Petersburg receiving Supplemental Nutrition Assistance Program (SNAP) benefits, the Virginia State University Cooperative Extension Family and Consumer Sciences Program’s Health Education Specialist in partnership with Petersburg Healthy Options Partnerships (PHOPs), Petersburg Healthy Community Action Team, River Street Market and the Harding Street Urban Agriculture Center collaborated together during the COVID-19 pandemic to establish an innovative mobile market concept called the POP! (Petersburg Offers Produce) Market. The POP! Market is a mobile market bringing fresh, local food to Petersburg’s food desert residents providing a unique opportunity to purchase healthy produce and maximize their USDA-SNAP food assistance benefits through the Virginia Fresh Match program.</p> <p><b>Results:</b> As a result of community feedback stating that 74 percent of surveyed community members stated that they would shop at a mobile market in Petersburg, the POP! Market opened every first and third Friday of the month. The POP! Market provided Petersburg residents with the opportunity to purchase produce from local farmers with either debit, credit, cash, or SNAP funds/EBT cards. Participating farmers products were assembled into boxes of fresh produce boxes valued and sold to anyone for \$20. USDA SNAP food assistance recipients were able to purchase the boxes for only \$10, therefore receiving \$10 worth of free farm products with their purchase! To date, 120 half-price produce boxes have been sold to USDA SNAP recipients living in the Petersburg food desert during the COVID-19 pandemic.</p>	
70.	<p><b>No Food on Grocery Store Shelves? Let’s Get Gardening Virginia! Training Beginning Home Gardeners during the COVID-19 Pandemic</b></p>	<p><b>Relevance:</b> At the onset of the COVID-19 pandemic in Virginia, grocery store shelves were emptied in a frantic effort to stock up home food supplies such as fresh produce. Consumers had deep concerns regarding their risk for acquiring COVID-19 while shopping at a grocery store. Due to safety</p>	<p>Strengthening Virginia Families</p>

		<p>concerns, consumers limited their social interaction and shopping frequency at grocery stores. During the months of March, April and May, Virginia State University Cooperative Extension received on-going requests for virtual training and downloadable online information on how to garden during the pandemic. Virginia citizens were interested in growing their own vegetable gardens to reduce their trips to the grocery store and ensure a safe, nutrition food supply. Vegetable gardening is an enjoyable pastime that can also supplement the household's food intake and potentially reduce cost of food. However, some basic knowledge is needed to pursue the endeavor and the majority of inquiries were from individuals with little or no experience in vegetable gardening. Training in areas such as crop selection, propagation, tillage, fertilization, irrigation and alternative production methods is needed to successfully equip home gardeners.</p> <p><b>Response:</b> In response to the gardening training needs precipitated by the uncertainty of the COVID-19 pandemic, Virginia State University Cooperative Extension Greenhouse and Specialty Crops Program developed virtual trainings to prepare individuals interested in starting a vegetable garden.</p> <p><b>Results:</b> As a result of the virtual educational activities conducted as a result of the COVID-19 pandemic, 5,000 interested home gardeners were able to increase their knowledge of vegetable gardening techniques. Over 50 individuals stated they would start a home garden and planned to implement the use of containers due to limited space availability. If only 50 participants planted a home garden of only 100 square feet, they could grow up to 0.5 pounds of mixed vegetables per square foot, yielding 50 pounds of fresh vegetables at their own home each year. If 50-100 square foot gardens were planted as a result of participating in home gardening virtual trainings, combined participant savings could total \$7,500.00 (\$150.00 per year x 50</p>	
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		participants) annually. That is extra money that could be used for individuals to build their emergency savings during the COVID-19 pandemic!	
71.	<b>COVID-19 Virtual Programing in Early Childhood Intervention Prevents Future Incidence of Violence for At-Risk Families in Virginia</b>	<p><b>Relevance:</b> The Center for Disease Control’s Essentials for Childhood model identifies the importance of safe, stable, and nurturing relationships and environments that help children grow up to be healthy and productive citizens. Early and persistent aggressive and anti-social behavior, unchecked by age six, is a key risk factor for future violence, and underscores the importance of prevention initiatives that target young children.</p> <p><b>Response:</b> In response to at-risk community needs, the research-based curriculum “Al’s Pals: Kids Making Healthy Choices” educational program was conducted in 2020. Through puppetry, lessons, play, games, role-playing, special songs, modeling and practice, children gain Social and Emotion Competence, a risk-reducing “Common Protective Factor”. Al’s Pals helps children learn to: identify and manage feelings, stop and think before acting, develop positive friendship skills, increase empathy, solve problems in peaceful ways and make healthy choices. Children learn the dangers of weapons, drugs and alcohol and how to seek out trusted adults. On March 13, 2020, it was determined that “Al’s Pals” could no longer be conducted in classroom settings due to the COVID-19 pandemic. There were still 11 modules remaining and 17 children in the program. The 11 modules were modified by VCE Early Childhood Educators and became “learn-at-home” lessons. In cooperation with the children and their 17 parents or grandparents, all 17 children completed the program on time, including one child whose family moved out state. COVID-19 program modifications included: communicating with families and educating preschool children via phone calls, video calls, texting, emails, parental feedback and 3 sets of learn-at-home activity packets.</p>	Strengthening Virginia Families



		<p><b>Results:</b> As a result of participating in the AI's Pals program, 17 children (ages 3 to 5) and their caretakers completed the program. Eight of the 17 children were physically aggressive at the beginning of the program, with six of those eight decreasing physical aggression by year's end. The AI's Pals Pre-Post Survey measured the following positive outcomes: 88% of children demonstrated increased problem resolution skills; 94% improved their ability to calm down; 88% practiced increased self-control; 94% could identify unsafe household items and understood the dangers of weapons, drugs and alcohol; 94% increased communication skills by using power words (manners and other social skills).</p>	
72.	<p><b>Virginia School and Community Garden Network serves as information hub for Virginia garden managers</b></p>	<p><b>Relevance:</b> The Virginia Community and School Garden Network was founded 3 years ago in response to requests from garden managers for a space where they could interact and learn from each other. It has grown slowly over the past 3 years as more people learn about it. The network serves a unique role in that it both provides gardeners with access to gardening experts from VCE as well as providing space where they can learn from each other in the months where the webinar topic is given over to discussion of garden programming and protocols.</p> <p><b>Response:</b> This year the network served a particularly important function as it worked to disperse best practices and state/agency regulations to gardeners during the pandemic. Many gardens turned to producing food for donation as schools closed and food supply chains faltered across the state. The network was able to provide gardeners with timely information on how to maintain a safe environment while also allowing gardening to continue.</p> <p><b>Results:</b></p>	<p>Strengthening Virginia Families</p>

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		<ul style="list-style-type: none"> <li>• Webinar: COVID best practices for shared garden spaces, Garden Notebook Template. Contacts: 29</li> <li>• Webinar: Garden to Go programs Contacts: 45</li> <li>• Webinar: Bees and Community Gardens, Contacts: 23</li> <li>• Webinar: Project GROWS gardens Contacts: 61</li> <li>• Webinar: Harvest Preservation Contacts: 37</li> <li>• Webinar: Using and Reviving School/Youth Gardens during the pandemic Contacts: 41</li> <li>• Webinar “Getting your garden ready for winter and planning for next spring” Contacts: 34</li> <li>• Webinar: Salem Giving Garden Contacts: 35</li> </ul>	
73.	<p><b>Master Financial Education Volunteer Program Statewide Impact - 2020</b></p>	<p><b>Relevance:</b> Covid-19 created both dramatic health and wealth shocks across Virginia, the United States, and the globe. Shortly after government forced shutdown were put in place in an effort to stem the tide of covid-19 infections, the unemployment rate spiked to 14.7% from historically low unemployment rates under 5%. Millions of households were ill prepared, financially, for long-term unemployment. Economic Impact Payments, as part of the CARES Act, were received by the majority of households in April and May of this year in the amount of \$1200 per eligible adult and \$600 per eligible dependent child. When these payments were passed in congress, it was thought this money would be enough to get households through the difficult time of covid-19. Further, housing and rent eviction moratoriums, extended and enhanced unemployment benefits, deferral of student loan payments were put into place in the spring of 2020 with original end dates of July 31st. Towards the end of July, it became clear to most that for financial difficult would plague our country. Extensions of deferral programs and eviction moratoriums were extended several times throughout the year. However, another round of covid relief payments would not come until</p>	<p>Strengthening Virginia Families</p>

		<p>January 2021. Pre-pandemic, only about 60% of households stated they had the financial resources to pay for a \$400 emergency. For roughly half of the country, they faced a financial emergency much greater than \$400 for which many could not prepare.</p> <p>At the national level, the 2018 Consumer Financial Literacy Survey prepared by Harris Poll found that 79% of adults would benefit from advice and answers to everyday financial questions and 73% are currently worried about their personal finances. The same survey revealed that 24% reported finding it difficult to reduce debt due to unexpected financial emergencies. Eight percent of all adults have debts in collection with Millennials (ages 18-34) having a greater percentage in collection – thirteen percent. These numbers reveal the urgent need for Virginians to receive education to improve their financial literacy to improve their money management skills and make wise financial decisions. The well-being of Virginians depends on individual and family financial capacity. Financial capacity will enable individuals to make informed choices, sound decisions, and avoid financial pitfalls, as well as obtain knowledge of strategies to implement during times of financial crisis. The process of developing financial capacities will provide individuals with the appropriate tools to understand and apply financial products, services, and concepts in an effort to improve their financial situation. VCE agents are skilled at providing financial education to youth and adults; however, there are too few agents to meet the needs of financial education in the state of Virginia. Trained volunteers allow us to reach more participants.</p> <p><b>Response:</b> The Master Financial Education Volunteer Program curriculum covers multiple personal finance topics and provides a standardized training program across the state. Volunteers receive a minimum of 20 hours of</p>	
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		<p>classroom training, led by a Virginia Cooperative Extension agent. In return, these volunteers give back a minimum of 40 hours in volunteer time. Due to Covid-19, nearly all of these educational pieces occurred virtually, rather in person starting in March. Virginia Cooperative Extension needed to be nimble, creative, and reactive in order to create and adapt content and delivery techniques in order to best assist residents of the Commonwealth of Virginia. We transitioned from in-person training to virtual training in the latter part of 2020. We had two cohorts of volunteers successfully complete virtual training with two more planned for early 2021.</p> <p><b>Results:</b> The pool of Master Financial Education Volunteers (MFEV) allows us to reach a larger adult and youth audience across the commonwealth. Covid-19 did slow our volunteer growth relative to years past. Two different groups successfully completed their MFEV training prior to the covid-19 lockdowns and two more groups completed their training in December once we successfully pivoted to a virtual training model. In total, 62 individuals took our MFEV training with 60 individuals successfully completing all the MFEV training requirements. We had 145 Master Financial Education Volunteers conduct financial education for us in 2020, down from 211 the year before. The decrease in volunteers is due to Covid-19 safety and restrictions. These MFEV contributed 3,103 hours equating to \$85,332 (\$27.50/hour). The volunteers assisted with a variety of programs such as: one-on-one financial counseling, Reality Store, Kids Marketplace, poverty simulations, youth money management workshops, Money Smarts Pay, Money Talk, just to name a few.</p>	
74.	<p><b>Financial Literacy - Capacity Building for Adults - 2020 Statewide Impact</b></p>	<p><b>Relevance:</b> Covid-19 created both dramatic health and wealth shocks across Virginia, the United States, and the globe. Shortly after government forced shutdown were put in place in an effort to stem the tide of covid-19 infections, the unemployment rate spiked to 14.7% from historically low</p>	<p>Strengthening Virginia Families</p>

		<p>unemployment rates under 5%. Millions of households were ill prepared, financially, for long-term unemployment. Economic Impact Payments, as part of the CARES Act, were received by the majority of households in April and May of this year in the amount of \$1200 per eligible adult and \$600 per eligible dependent child. When these payments were passed in congress, it was thought this money would be enough to get households through the difficult time of covid-19. Further, housing and rent eviction moratoriums, extended and enhanced unemployment benefits, deferral of student loan payments were put into place in the spring of 2020 with original end dates of July 31st. Towards the end of July, it became clear to most that for financial difficult would plague our country. Extensions of deferral programs and eviction moratoriums were extended several times throughout the year. However, another round of Covid relief payments would not come until January 2021. Pre-pandemic, only about 60% of households stated they had the financial resources to pay for a \$400 emergency. For roughly half of the country, they faced a financial emergency much greater than \$400 for which many could not prepare.</p> <p>At the national level, the 2018 Consumer Financial Literacy Survey prepared by Harris Poll found that 79% of adults would benefit from advice and answers to everyday financial questions and 73% are currently worried about their personal finances. The same survey revealed that 24% reported finding it difficult to reduce debt due to unexpected financial emergencies. Eight percent of all adults have debts in collection with Millennials (ages 18-34) having a greater percentage in collection – thirteen percent. The well-being of Virginians depends on individual and family financial capacity. Financial capacity will enable individuals to make informed choices, sound decisions, and avoid financial pitfalls, as well as obtain knowledge of strategies to implement during times of financial crisis. The process of</p>	
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		<p>developing financial capacities will provide individuals the appropriate tools to understand and apply financial products, services, and concepts in an effort to improve their financial situation. The well-being of Virginians depends on individual and family financial capacity. Financial capacity will enable individuals to make informed choices, sound decisions, and avoid financial pitfalls, as well as obtain knowledge of strategies to implement during times of financial crisis. The process of developing financial capacities will provide individuals the appropriate tools to understand and apply financial products, services, and concepts in an effort to improve their financial situation. These numbers reveal the urgent need for Virginians to receive education to improve their financial literacy to improve their money management skills and make wise financial decisions.</p> <p><b>Response:</b> FCS Agents and personnel collaborated with Master Financial Education Volunteers, Extension Leadership, and community volunteers to deliver financial literacy workshops, and one-on-one counseling sessions to Virginia residents. Due to Covid-19, nearly all of these educational pieces occurred virtually, rather in person starting in March. Virginia Cooperative Extension needed to be nimble, creative, and reactive in order to create and adapt content and delivery techniques in order to best assist residents of the Commonwealth of Virginia. VCE Agents collaborated with the Department of Social Services, Department of Housing, community colleges, Volunteer Income Tax Assistance Sites, earned income tax sites, Financial Empowerment Centers, Virginia Tech Income Tax School, community organizations, correction facilities, as well as churches and businesses across the commonwealth.</p> <p><b>Results:</b> 2458 adults attended one of 607 sessions led by 16 VCE Extension employees in 2020. There was a dramatic increase in planned behavior based on surveys taken prior to the adult financial literacy programs and</p>	
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		<p>after them: we observed that 87% of participants plan on writing short term financial goals after attending our training while only 23% did so prior to coming to our training. We also see 86% of attendees plan on writing a spending and savings plan while only 18% did so prior to attending one of our trainings. The majority, 84% of attendees plan on paying themselves first for saving towards a financial goal; a stark improvement from the 20% who planned on doing so prior to attending one of our classes. After our training, we also report that 82% plan on saving towards their emergency fund, 82% plan on paying down debt, and 86% plan on checking their credit reports annually.</p>	
75.	<p><b>2020 Super Pantry Financial Lessons Strengthen Money Management Skills</b></p>	<p><b>Relevance:</b> Individuals and families continue to experience financial distress because of inadequate savings, too much debt, and poor planning for major life events, as well as from unanticipated events such as illness, layoffs, or divorce. According to a 2020 report by the United Ways of Virginia, 11% of Northern Shenandoah Valley residents live in poverty. Yet living above the poverty level does not provide an adequate income for maintaining financial self-sufficiency. The same report indicated that another 31% of households are defined as Asset Limited, Income Constrained, Employed (ALICE). ALICE families are working, but do not have sufficient income to make ends meet. Our Super Pantry financial lessons support these residents by teaching the skills they need to become self-sufficient.</p> <p><b>Response:</b> We partner with Family Nutrition Program Assistants to provide financial lessons for participants in the Super Pantry program. During each of the four sessions, participants receive a nutrition lesson, cook and eat lunch together, receive a financial lesson, and take home a bag of groceries. Because limited-resource audiences relate better to and are more motivated by lessons specifically developed for their economic realities, we developed interactive, hands-on lessons help them apply what they are learning to their</p>	<p>Strengthening Virginia Families</p>

		<p>daily lives. Through these lessons, Master Financial Education Volunteers have tangible, structured tools to effectively lead financial education for limited resource audiences. Due to COVID-19, these lessons were only available in the first quarter of the year, reaching approximately 42 people through 20 lessons.</p> <p><b>Results:</b> Of the 42 people who participated in 2020, 9 of the “graduating” participants completed the follow-up evaluation after finishing 4 or more lessons. Participants reported a variety of behavior changes, such as writing financial goals, saving for emergencies, having a written spending and savings plan, opening a bank account, and paying bills on time. Of those responding, 3 (33%) changed 5 or more behaviors; 5 (56%) changed 3 or more; 8 (89%) changed one or more. The one respondent who had not yet done so indicated they still planned to make 7 of the recommended changes as a result of the program. Comments on the evaluations showed that after the program participants were better able to plan, set goals, save money and pay off debt. One person wrote, “I learned how to set aside money for a goal.” Another said, “I will sell a few items for extra income.” And a third commented, “Changes are easier to make than I previously thought.”</p>	
76.	<p><b>2020 Poverty Simulation Brings Realistic Experience to Help Community Members Understand Limited Resource Audience Statewide Impact</b></p>	<p><b>Relevance:</b> Poverty impacted 1 in every 10 Virginia residents (9.8%) in 2018 (census.gov). The federal guidelines for determining the poverty threshold is dependent on income as well as the number of people living in the household. For example, in 2018, a family of one is considered under the poverty level if his or her income is less than \$12,140 while a family of four is under the poverty level if household income is less than \$25,100 (Federal Register, 2019). Besides the negative financial aspects of being impoverished, it is also linked to poor nutrition and health, emotional distress, teen pregnancy, and academic failure (vaperforms.virginia.gov). There are drastic differences in poverty rates across the state of Virginia,</p>	<p>Strengthening Virginia Families</p>



		<p>with the northern region having the lowest rates (6.6%) while the south (20.2%) and southwest (18.6%) regions having the highest (2015 numbers).  <b>Response:</b> Virginia Cooperative Extension’s Family and Consumer Sciences (FCS) and 4H Agents hosted Poverty Simulations to help individuals understand the real-life situations that families living in or near poverty must experience daily. The simulation gave participants a first-hand knowledge of the decisions these families have to make, and their fears and frustrations. In the simulation, 44 to 82 participants assume the roles of up to 26 different a low-income families living on a limited budget. Some families were newly unemployed, some were recently deserted by the primary wage earner, some were homeless, and others were recipients of TANF (temporary assistance for needy families), either with or without additional earned income. Still others were senior citizens receiving disability or retirement checks or grandparents raising their grandchildren. The task of the “families” was to provide for basic necessities and shelter during the course of four 15-minute “weeks.” The major strategy of the simulation is to allow participants the opportunity to interact with resources that would be found in low-income communities such as; a bank, childcare center, grocery store, payday/car title lender, employer, utility company, pawn broker, social service agency, faith-based agency, mortgage company, school, and community health care facility.</p> <p><b>Results:</b> Covid-19 inhibited our ability to conduct poverty simulations in 2020. We now have in place the ability to conduct these virtually. Virtual simulations combined with the possibility of doing in-person simulations the latter half of 2021 make us optimistic we can increase the quantity of simulations in 2021 to help educate the commonwealth of poverty. In 2020, we conducted 5 simulations, down from 24 the year prior. Our participant count for the year was 394 and we used 118 volunteers. Of those surveyed:</p>	
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		<p>95% stated that the simulation changed their views and increased empathy toward those facing poverty, 92% changed their view regarding financial pressure of those facing poverty, 91% changed their views regarding the impact of social services and other resources available for those facing poverty, and 93% changed their views regarding the emotional stress of those facing poverty.</p>	
<p>77.</p>	<p><b>2020 Coping with a Money Crunch Webinar Helps Individuals and Families Manage the Financial Hardships Caused by COVID-19</b></p>	<p><b>Relevance:</b> The COVID-19 Pandemic created financial hardships for families around the nation. Due to the economic shutdown and the effects of unexpected illness, layoffs, and school closings, individuals and families were suddenly without sufficient income to make ends meet. Many of these were people who had previously been financially self-sufficient and who lacked the necessary skills to navigate community services systems, manage money effectively, prioritize needs, and negotiate with creditors.</p> <p><b>Response:</b> The Coping with a Money Crunch webinar provided a virtual opportunity for participants to proactively confront their situation. The two-hour webinar explained how to access immediate options, such as economic impact payments, pandemic unemployment assistance, the paycheck protection program, and public assistance programs, as well as how to create a “crunch” spending plan to guide decisions. The webinar also encouraged participants to use all available resources, narrow priorities, and contact creditors to negotiate pandemic relief. Finally, the webinar outlined COVID-19 scams and predatory loan offers that could harm consumers, in addition to covering less risky alternatives. Participants could attend the webinar by phone, viewing a copy of the slides received in an e-mail, or through the Zoom application on their smartphone, tablet, or computer. Following the webinar, participants received a file by e-mail containing additional handouts and resources.</p>	<p>Strengthening Virginia Families</p>

		<p><b>Results:</b> From May through December 21 sessions were held, reaching a total of 70 participants. Of these, 26 completed the end-of-session evaluation. Participants reported a variety of behavior changes, such as acting on immediate options, revising or creating a spending plan, exploring additional resources to make ends meet, narrowing priorities, contacting creditors, and avoiding scams and high-cost loans. Of those responding, 9 (35%) planned to take 5 or more recommended actions; 21 (81%) planned to take 3 or more; and 26 (100%) planned to take at least one recommended action. The three-month follow-up evaluation demonstrated that many of them followed through on their action plans. Of the 12 people who responded, 10 (83%) indicated that they had taken steps to improve their financial situation. Responses showed that 6 (50%) had acted on immediate options, 5 (42%) had revised or created a spending plan, 8 (67%) had explored additional resources to make ends meet, 10 (83%) had narrowed their priorities, 1 (8%) had contacted creditors, and 8 (67%) had used the information to avoid scams and high-cost loans. For the question about contacting creditors, 5 (42%) indicated the question did not apply to them. One participant commented, “The webinar was extremely helpful and easy to follow, with many great tips on finances, especially categorizing money obligations.” Another said, “I will not use credit cards for things that will be gone before it's paid off.” And another wrote, “I will stick with my spending plan/budget by utilizing a calendar and realizing it is subject to change.” Respondents also estimated that they would share the information with a total of 540 additional people.</p>	
78.	<p><b>2020 Continued Farm Stress Program during Covid-19 through virtual programming and limited in-person programming.</b></p>	<p><b>Relevance:</b> Agriculture is a stressful occupation that ranks among the most hazardous industries to work in, combining that with no profit equals a recipe for disaster. Dairy farming Community has been on a roller coaster ride of horror prices for over 5 years. It was projected to see an increase in</p>	<p>Strengthening Virginia Families</p>

		<p>milk prices for 2020. The dairy farming community was not alone; other agricultural sectors have also been seeing financial hardship, beef cattle market and crop prices had been suffering. 2020 was projected to be a better year for Agriculture, then covid-19 hit. The closing of primary schools was the first hit the dairy farming community, the second came from colleges and universities closing, the third hit was States closing restaurants because of covid-19. Milk cooperatives frantically struggled to process milk and get it out to the consumers before it would spoil. Schools and Restaurants use dairy products in amounts and container sizes that the normal household does not, resulting in millions of gallons of milk being dumped, because it had no place to go. Processing plants are not made to manufacture all sizes of product containers. Farmers milk checks were reduced or not paid. In areas where milk does not have to be dumped farmers in the same milk cooperative were charged for the milk dumping in their milk checks to help ease the blow on the Milk Cooperative from losing money for other farmers for lost milk. This couldn't have come at a worse time. Once again milk prices crashed and now farms were being hit with large Covid impact bills, some totaling over \$10,000 for large dairies. Farms were forced to dump milk, bury crops that couldn't make it to the processor, and bury healthy animals because processing plants were closed down. The loss to the Agricultural industry is in the Trillions.</p> <p><b>Response:</b> Agricultural professionals working with Dairy farmers saw the change not only in the landscape but also the mental and physical state of the farmer. As a result, Michigan State University set out to develop and implement training Extension Agents in farm stress and mental health. Stress can lead to increased accidents and even death in the farming community. Too much stress can leave a person accident prone, and it can affect your overall health. By learning to identify common stressors,</p>	
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		<p>recognize the symptoms of stress and manage stress, we can work to make the workplace safe and live a more fulfilling life. All while striving to combat the stigmatism about Mental Health and Suicide. Bring light to seeking help, when help is needed. Since 2018, Dairy Extension agents have been offering Farm Stress programming across the State to both farmers and Agricultural professionals. The programs have been open to all sectors of Agriculture.</p> <p><b>Results:</b> As a result of COVID-19 we have been required to make modifications to our programming style. Once in-person, face-to-face meetings went fully virtual for over 7 months. The farm stress programming is meant to be a in-person program because of the sensitivity of the topic. To be able to continue offering the topic we made the decision to offer virtual programming where we asked participants to leave their camera on. This helped us to engage with our participants. This programming worked for several meetings. We also saw the need to offer a pre recorded video for those who may want to see the program but not be on camera. We recorded both Farm Stress programs we offer and placed them on YouTube. During 2020, prior to COVID-19 shutdown 2 successful in person programs were offered. During the closure 2 virtual cameras on programs were offered. The YouTube recordings are still active on the internet. When limited programming opened back up one more in-person program was offered.</p>	
79.	<p><b>2020 -Container Gardening Project provides communities with basic gardening education</b></p>	<p>Due to the sudden increase of food insecurity in Virginia due to the pandemic and related job losses there was a sharp upsurge in interest in vegetable gardening. This increase was compounded by school closures in the spring of 2020. Parents and teachers sought ways to teach nutrition and science and maintain contact with students via gardening at home. The Virginia Cooperative Extension Family Nutrition Program (FNP) quickly responded to these new needs with an increase in garden programming for</p>	<p>Strengthening Virginia Families</p>

		<p>both youth and adults in low income communities at partner sites such as schools, food pantries, and clinics.</p> <p><b>Response:</b> FNP created an internal mini grant program in which SNAP-Ed Program Assistants and/or VCE Agents could apply in partnership with a community partner serving eligible populations for mini-grants of up \$250 to distribute vegetable seeds, basic container gardening supplies and gardening and nutrition education. Mini-grant awardees were asked to share their total reach, partnerships formed, media coverage, and project pictures.</p> <p><b>Results:</b> A total of 33 grants were funded in spring of 2020. Due to the popularity of the program with community partners, a second round of 31 grants were funded in fall of 2020. The total number of participants reached by the two rounds of grants was 755 youth and 360 adults The total number of partnerships forged through this program was 56. Partner distribution site types varied widely, reflecting the great need for this program.</p> <ul style="list-style-type: none"> <li>• Community garden - 3</li> <li>• Low income housing - 2</li> <li>• Faith based organization - 1</li> <li>• Pantry - 7</li> <li>• Boys and Girls Club - 1</li> <li>• Clinic - 1</li> <li>• Farmers Market - 1</li> <li>• Library - 1</li> <li>• Parks and Recreation - 1</li> <li>• School - 5</li> <li>• 4H youth club - 10</li> </ul> <p>In order to reach more eligible individuals and families, partner sites were given the opportunity to create programming around the container gardens, and many did. Partner program strategies included having youth create</p>	
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		<p>photo diaries documenting the growth of their plants and partnering with farmers to create videos on how to grow the plants. Due to the strong positive response from partners to this new program it will be continued in the coming program year.</p>	
<p>80.</p>	<p><b>2020 Clean and Healthy Homes</b></p>	<p><b>Relevance:</b> Local stakeholders and Extension Leadership Council members identified the need for affordable clean, healthy, and safe housing as one of the top concerns for residents in the area. The City of Virginia Beach Department of Human Services Family Center Unit and Child Protective Services also expressed concerns regarding the living conditions of several of their clients. Many of their clients suffered from an inadequate shelter and unclean environments making the home unsafe for the children.</p> <p><b>Response:</b> During 2020, Clean and Healthy Homes workshops were offered through zoom to residents. The workshops provided a foundation for household cleaning and organization skills. The objectives of these workshops were to help families understand the stress associated with an unorganized home and how stress affects the well-being of the family. Another objective of the workshop was to help participants develop housecleaning plans suitable for their families. Workshop provided knowledge to clean various rooms in the home on a daily, weekly, monthly, seasonally basis as well as the proper way to clean various household appliances. Participants learn how to develop household cleaning strategies and schedules to help minimize stress associated with living in unclean and unhealthy conditions.</p> <p><b>Results:</b> Twenty-six individuals participated in Clean and Healthy workshops offered for Department of Human Services. Post-workshop evaluations were emailed to participants and 18 were returned. The following were outcomes data.</p> <p>As a result of the workshop, how likely will you:</p>	<p>Strengthening Virginia Families</p>

		<ul style="list-style-type: none"> <li>• 60% will change unsafe conditions of your home</li> <li>• 100% will follow a plan for housekeeping</li> <li>• 60% choose safe cleaning products and equipment</li> <li>• 80% involve the whole family in keeping the home clean and safe</li> </ul> <p>Workshop participants were also asked “What is the most important thing you learned from the workshop”?</p> <ul style="list-style-type: none"> <li>• Learned new cleaning tips</li> <li>• Taught me about what good cleaning was</li> <li>• Good organization tips</li> <li>• Develop good cleaning habits</li> </ul>	
81.	<p><b>2020 Balancing Life Series Equips Adults with Tools to Navigate COVID-19 Challenges</b></p>	<p><b>Relevance:</b> In March 2020, the lives of many Virginia and North Carolina residents were upended as the threats of coronavirus closed physical offices and schools, shifted basic shopping habits, halted many social activities, and brought about the need for immediate decisions regarding logistics for issues such as securing food, supervising and schooling children while juggling work responsibilities, and managing the related stressors associated with the pandemic, political stress, and racial injustice. Without the opportunity to connect in person due to COVID-19, and with the urgency to engage in discussions about race relations, Virginia Cooperative Extension launched a highly effective virtual webinar series and professional development series, using technology and strategies to engage participants in ways that foster both community and individual capacity-building.</p> <p><b>Response:</b> In response to these challenges, Virginia Cooperative Extension launched a series of “rapid-response” weekly webinars addressing current needs stemming directly from the COVID-19 pandemic. Soon after launching, faculty from NC Extension joined the effort. To date, 33 distinct sessions have been held, with topics including “Working and Schooling Remotely from Home,” “Teens, Anxiety and Stress,” “Resiliency in the Face of</p>	<p>Strengthening Virginia Families</p>



		<p>Adversity," "Secondary Trauma," and "Listening Skills to Support Racial Understanding." The typical audience size is just over 200, with the largest sessions reaching over 500 people. The sessions have reached over 2600 distinct participants. The format includes a host who welcomes an expert speaker, engages participants in the chat box during the presentation, and closes the session. After the first few sessions the webinars were truncated to 30 minutes, with some topics warranting an additional, longer session. The team also leveraged additional resources to deliver a three-part professional development training for youth-serving professionals on engaging youth voices in conversations about race, reaching a national audience of more than 300 individuals. The emphasis on all of this work is to build both individual and community capacity to respond to the ongoing, escalating, sometimes very intense circumstances surrounding the economic, social, emotional, and physical effects of the pandemic, hard conversations about racial justice, and political stress. The webinars have continued and evaluation feedback, including recent focus groups, have confirmed a request that the series continue beyond the span of COVID-19.</p> <p><b>Results:</b> The participants for the Balancing Life sessions represent a broad array of agencies and organizations in both Virginia and North Carolina. Moreover, they hold different positions and use the information for both personal and professional reasons. Post-webinar surveys were administered with a link available during 6 webinars. There were 476 responses to these sessions. On a scale of 0 to 10, with 0 being the least (e.g., not at all useful) and 10 being the most (e.g., extremely useful), across 476 responses, on average participants rated the webinars as very useful and indicated they were likely to apply something they learned, either in their personal or professional lives. Local governments, mental health service providers, schools, colleges, human resources departments, non-governmental</p>	
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		<p>organizations, faith-based groups, correctional facilities, and other non-profit groups have not only attended, but regularly replay or repost the recordings from the sessions. Thus, the full reach is not known. Focus group sessions were led by a team of external evaluators with 26 attendees that had participated in at least 3 recent sessions. The 26 repeat attendees engaged in the focus groups and feedback highlighted that the information has helped participants personally, with recurring responses noting that the content covered in the webinars has been very informative, helps participants with their own wellness, create a sense of community, has helped participants expand their thinking, and has been a great resource to share with others. Focus group participants further articulated that the webinars have helped them professionally. Some specific themes are that the material covered in the webinar helps the participants better serve their clients and students, that the webinars increase understanding that taking care of themselves helps participants take better care of their clients, and participants have enjoyed finding resources that they were not aware of before. When asked what keeps them coming back, responses surrounded themes of the variety of topics helps with both personal and professional life, building connections, a nice break from work, online option allows for more people to participate, and they like the short, to the point 30 minute format. When asked if there was anything else they would like to share, one repeated theme was a request to continue the series post COVID.</p>	
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**6. Youth Development**

Corresponding VCE Program Teams:

- 4-H Positive Youth Development

No.	Title or Activity Description	Outcome/Impact Statement	Planned Program Name/No.
82.	<p><b>Youth Financial Management Statewide Impact 2020</b></p>	<p><b>Relevance:</b> The 2018 Junior Achievement/The Allstate Foundation reported that 72% of teens look to their parents for money management information. The report also shows that 50% of youth have a goal of creating a savings plan while 43% are concerned that they do not have the skills to manage their money. Meanwhile, America Saves (2015) state that while youth are aware that it is important to save, they don't know how to save. Seemingly, youth are eager for financial education, but lack the resources to achieve financial literacy. For many, attending college will be one of the earliest major financial decisions one makes. This year, Junior Achievement/The Allstate Foundation released a report stating only 50% of adults between the age of 18 and 29 were "very confident" in their ability to pay off their student loan. It is quite possible that this lack of confidence stems from an underlying misunderstanding of personal finance topics. While Virginia was one of 37 states requiring implementation of personal finance state standards and one of 17 states requiring students to take a personal finance course, it is NOT one of the 7 states that require personal finance student testing (councilforeconed.org) as of 2018. The Program for International Student Assessment (PISA) reported that of 15 year old students from 13 countries, the United States scored less than average. All of this is evidence that there is a need for more youth financial education. A 2016 Bank of America/USA TODAY Better Money Habits Report found that young Americans 18 – 26 years of defined adulthood as "financial independence." This population indicated they wished they had learned more about personal finance in school. Only 31% reported their high school did a good</p>	<p>Youth Development</p>

		<p>job teaching financial skills and only 41% of those attending college reported that their college did a good job.</p> <p><b>Response:</b> Covid-19 severely altered the learning landscape for youth across the commonwealth and the rest of the United States. What started as a fairly typical year in 2020, soon turned to homeschooling, in-class alternative scheduling, and virtual learning. This created several challenges for conducting financial education and simulation programs as covid-19 restrictions prevented us from conducting these in schools and it took us time to develop a virtual alternative.</p> <p>Virginia Cooperative Extension uses several approaches and programs to educate youth and increase the financial capacity of Virginia’s youth. The program's goal is to educate students about sound money management skills and the financial planning process and to help them begin to develop positive behaviors that are necessary to attain financial maturity and achieve a secure future. VCE offered Reality Store simulations, Kids Marketplace simulations, Real Money Real World simulations, and Reading Makes Cents. Each of these programs offers hands-on learning in an environment that correlates to Standards of Learning and educational mandates.</p> <p><b>Results:</b> VCE agents and personnel conducted a total of 41 Kids Marketplace simulations in 2020, down from 66 the year prior, with an audience of 1274 children, compared to 2,530 the year prior. Of those surveyed, 92% of these youth learned more about using money, 93% learned that different jobs pay different amounts of money, 69% reported that the program gave them new ideas on how to handle money in the future, and 84% of youth planned on talking with their parents about money and the program. VCE agents and personnel conducted a total of 104 (227 the prior year) Reality Store programs in 2020 with an audience of 3315 (11,623 last year) children. Of those surveyed, 91% stated the program increased awareness of making</p>	
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		<p>smart financial decisions and 97% reported that having insurance and a savings account would help plan for emergencies, and 72% reported there is a clear relationship between my performance in school, my participation in community activities, and my future occupation. Real Money, Real World program had the biggest decrease in usage due to covid-19 relative to our other programs. VCE Agents and personnel conducted 6 Real Money, Real World programs in 2020, compared to 45 in 2019, with an audience of 201 children, compared to 2053 children in 2019. Of those surveyed, 84% indicated they will think through how spending impacts other opportunities and choices and 81% stated this program helped them decide they will seek out more training or education after high school.</p> <p>Combined, 4,790 (15,419 in 2019) Virginia youth were reached by Extension Financial education in 2020, with the decrease attributed to covid-19 restrictions.</p> <p>Reality Store Personal Stories: Wise insights that were shared on evaluation - "You don't get to choose what happens in your life but you do get to choose what you do with what happens" and "I learned that little expenses add up very quickly and you need to be prepared for situations in the future." "That clothes and insurance was more expensive that I thought. Having insurance helps. I learned there are a lot of things to think about if you have kids, like all the food and things they need." Quotes from 12th grade Reality Store "Adulging is hard!" "I did this in 9th grand, and it started me thinking about my career, but this time, Wow, it really hits home!" "This has been a good reminder, but when I did this in 9th grade I decided I would be prepared and I am!"</p> <p>Kids Marketplace personal stories: "I want a big truck when I grow up. I am going to have to get a good job." "I need to not ask for so many Christmas</p>	
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		presents" When asked why, she replied, " Mom and Dad have to spend so much money." "I am going to save my money in case I have a problem."	
83.	<p><b>All Eyes on Mars: Engaging Youth in 4-H STEM-based Learning During the COVID-19 Pandemic</b></p>	<p><b>Relevance:</b> The United States, K-12 educators lack STEM (Science, Technology, Engineering, Math) educational opportunities to prepare children to pursue STEM careers in the future. During the COVID-19 pandemic, nationwide school closures and in-person 4-H programming cancellations created strong demand for virtual educational programming. Prior to the pandemic, educators felt that they needed more support and resources to confidently deliver STEM education.</p> <p><b>Response:</b> Virginia Cooperative Extension’s (VCE) as both Virginia State University (VSU) and Virginia Tech (VT) received a competitive grant to develop the 2020 4-H STEM Challenge Mars Base Camp (MBC) kit. Mars Base Camp, a new STEM learning tool she helped develop alongside other educators and Extension professionals. The kit features four unique hands-on activities to get kids and teens, ages 8-14, to explore mechanical engineering, physics, computer science and agriculture. In partnership with National 4-H Council (N4HC) and diverse 4-H youth (rural, urban, minority, and military), the Virginia Team successfully developed and tested four activities for the MBC kit. To respond to the pandemic situation specifically, we developed “family kits” in addition to the traditional “educator kits.” The N4HC held a national “kick-off” televised event featuring Bill Nye the Science Guy on Oct. 1, 2020 on Good Morning America. To expand the reach of MBC, the VA 4-H State Office sent one family kit and one educator kit to each of the 108-unit offices and six 4-H Educational Centers in Virginia. With our kit development funds, we also provided opportunities for 4-H agents and volunteers to receive additional kits to support STEM programming. Furthermore, we received a kit grant from the Science Matters partnership to provide 60 educator and 50 family kits (sent directly to families) to benefit</p>	Youth Development

		<p>the underserved and youth with limited STEM opportunities in Bedford, Cumberland, Hanover, City of Richmond, Carroll, Gloucester, Alexandria, Campbell, Patrick, Petersburg, Henrico, Northampton, Westmoreland, City of Chesapeake, Scott, Appomattox, Southampton, Fluvanna, Louisa, Alleghany, Lancaster, Buckingham, Greensville/Emporia, and Fauquier counties.</p> <p><b>Results:</b> As a result of the creation of the MBC kits, VCE received national attention and recognition for MBC. The MBC kit is the top selling 4-H curriculum and most positively rated item sold at Shop 4-H <a href="https://shop4-h.org/products/mars-base-camp-stem-challenge">https://shop4-h.org/products/mars-base-camp-stem-challenge</a>. Over 17,000 kits (\$17.95 per kit) were sold, earning National 4-H programs \$305,150.00 in 2020 sales. Nationwide, over 248,000 youth acquired valuable skills preparing them for a future STEM career path.</p>	
84.	<p><b>2020 Virtual Livestock Shows and Sales Provide Safe and COVID-Compliant Opportunities and Revenue for Youth Livestock Participants During a Pandemic</b></p>	<p><b>Relevance:</b> Positive youth development focuses on building life skills that youth need to be successful, contributing members of society. The development of these life skills is greatly impacted in a positive way through youth livestock projects, and specifically those that involve the selection, daily care, exhibition, and marketing of animals. Youth learn responsibility, work ethic, financial management, and decision making. Youth involved in livestock focused exhibitions grow and utilize all of these important life skills while networking with other youth who have similar interests and career goals. The Governor’s stay-at-home-order, and resulting cancellation of 4-H and FFA youth events impacted the majority of spring and summer youth livestock shows. These events, in some cases, were just weeks from happening and youth had invested months of preparation and thousands of dollars on the purchase and feeding of their animal projects. An immediate need arose to identify alternative methods for helping youth market these</p>	Youth Development

		<p>projects, and if at all possible, still be able to exhibit them in a safe, COVID-compliant manner during these extraordinary times.</p> <p><b>Response:</b> Extension leaders and youth livestock organization advisors across the country began working to develop Virtual Shows that allowed youth to submit pictures and/or videos of their project animals while judges evaluated those entries virtually, either recording their official placings and reasons or sharing those via zoom with event participants. In a collaborative effort with our colleagues from North Carolina Cooperative Extension, we adopted a Google Forms concept that allowed for the collection of entries (pictures and videos), sorting of livestock into appropriate classes, and then sharing with show officials for evaluation of the classes. VCE field faculty and 4-H volunteers with show management responsibilities were able to customize these resources according to their needs and develop a virtual event that worked best for their entries and exhibitors. To fulfill the needs for helping youth market these projects in the absence of in-person premium auctions, a cooperative effort was established with two professional online auction platforms. Their information was shared with Unit VCE Agents and show managers, leaving the responsibility for selecting a platform and working out details to each individual show and sale. These virtual sales provided a safe, contactless opportunity for youth to market their projects and/or receive support donations towards their efforts. In an effort to reduce the cost associated with a professional online auction platform, Orange County – VCE created their own online auction/support platform using Google, and willingly shared that option with other Units and shows.</p> <p><b>Results:</b> With the future of spring and summer livestock shows looking bleak, these steps toward creating successful virtual options for Virginia youth saved the day for nearly all Virginia youth livestock shows. Our first</p>	
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		<p>virtual show endeavor was also our largest with over 270 head of livestock from 114 exhibitors in one Unit. Extension personnel and local FFA advisors worked together to help youth record and submit videos, providing trainings on what a good video should include and the best ways to upload. They also were the first to work with one of the online auction platforms, planning and executing a virtual online support auction that generated over \$170,000, in support funds – no animals were sold, for their participating exhibitors. This initial virtual show and sale manifested into 15 shows, representing 27 Units in all four VCE districts. Over 450 youth exhibited 975 head of livestock virtually, with over \$600,000 generated from either the sale of animals or support donations for these youth exhibitors. Shows ranged in size from 270 head to less than 20 head; 114 exhibitors to 15 exhibitors, proving that these virtual events provided a cost-effective option in the face of complete cancellation. Youth participants shared that while they missed the excitement and in-person interaction of traditional shows, they appreciated the opportunity to compete and showcase their projects. Several indicated that they learned the importance of submitting a quality video and providing the judge with the best possible views of their animals, because this truly was the only opportunity the judge would have to evaluate them. Several shows included showmanship divisions in these virtual events, including a question and answer segment or presentation to help the judge better sort the youth. An added and unexpected bonus to conducting virtual shows was having many Virginia youth enter national level virtual shows, competing against livestock and youth from all over the United States in extremely competitive shows for all four major species. Show organizers went above and beyond to make these impactful experiences for their local youth. Everyone learned that virtual shows are just as time consuming, and in some cases more so, than live events. It takes time to review pictures and videos,</p>	
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		<p>get entries sorted into the appropriate classes, and then work with the judge(s) to share those files and get the results prepared and ready to share. Most provided a virtual “reveal” via Zoom where the judge placed and talked each class, giving youth the opportunity to hear, from the actual judge, where and why their animal placed the way it did. This added a personal element to the shows and most provided a Q&amp;A opportunity at the conclusion of the Zoom for youth to ask questions and receive feedback. While not their ideal show experience, youth participants expressed their gratitude for the opportunity to participate and acknowledged that they learned how to adapt, how to prepare livestock for a video, and how to appreciate new and different ways of exhibiting your projects.</p>	
<p>85.</p>	<p><b>2020 Virtual 4-H Programming Resources for In-School Programming and Beyond</b></p>	<p><b>Relevance:</b> The shift from in-classroom to remote learning in Virginia’s K-12 schools as a consequence of the ongoing COVID-19 pandemic presents significant challenges to teachers, students, and their families. The impact of the abrupt and early dismissal of in-school learning due to COVID-19 has essentially added an additional three-month ‘summer’ of limited access for these students, during which the achievement gap could magnify, deepening urban/rural, racial, and income disparities in education. Typical summer-based enrichment camps, often targeting underserved communities, have largely been cancelled or shifted entirely to online remote delivery. It is worth noting that according to 2018 research from the National Center for Education Statistics, 20% of Virginia families do not have access to the internet (United States Census Bureau, 2018), and the rate is much higher among populations that exhibit risk factors such as poverty and rurality (Peña-Lopez, 2010). Even among rural families with internet access, service can be slow and unreliable, a condition which may continue to deteriorate as infrastructure is strained by the unprecedented connectivity demands of the COVID crisis.</p>	<p>Youth Development</p>

		<p>The strain that was caused by COVID-19 in March, would be enough to cause increased stress on teachers, who are dealing with the gap that was created by the extended time out of school. This was also built upon when the fall semester started, and schools across the commonwealth were operating in virtual, hybrid and some face to face modes. The fluidity of how school looked, added stress on trying to provide high-quality educational opportunities that could be both in the classroom or virtual.</p> <p><b>Response:</b> Virginia Cooperative Extension (VCE) is rooted in programming using the experiential learning, research based, high quality program model. VCE 4-H Agents, understand the magnitude of the gap and stress that this new change would have on our schools and teachers. As a way to support our school systems, and other youth serving organizations (such as after-school programs, Boys and Girls Club, etc) a group of agents came together to create a working-group to identify, create and house resources and lesson plans that could be accessed and used with educators across the country both virtually and face to face. The website was also developed to serve as a database of resources for new agents, as it is an opportunity to direct new agents to one resource to get them started. This process was developed in three phases.</p> <p>Lesson development and SOL correlation was the first phase of the project. Agents identified lessons that were already created through our 4-H @ Home projects and other school-based curriculum that had traditionally been delivered in person previously. This group focused on correlating lessons to SOL standards, so that they could be easily identified to teachers looking for particular SOLs. They also made sure that all lessons were written in a way that could be taught at home or virtually, so that a student could self-guide themselves or with a parent help through the experiential learning process, to provide an opportunity for learning in hybrid and virtual settings.</p>	
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		<p>The second phase was to add life skill and 5C correlations to the lessons and activities. The 5C correlations are part of the Virginia Department of Education, and focus on: Critical Thinking Skills, Collaboration Skills, Communication Skills, Creative Thinking Skills, and Citizenship Skills. The group also used the 4-H Targeting Life Skills model to identify life skills that are being focused on in each lesson.</p> <p>The final phase of this project was to create a website that could be used to house the resources in a user-friendly way, so that teachers, educators and agents, could access materials from one common place. A google site was created with pages for each grade level, career and technical education, 4-H communication projects, computer science resources, embryology, health rocks, holiday themed activities, school gardens, scientific investigation and 4-H science fair resources, and Virginia Cooperative Extension Speakers Bureau. The website requires teachers to register through a google form to gain access, and is set up to connect the resources back to their local extension agent as a resource.</p> <p>The website was developed to help agents and educators to create hands-on learning even when face to face was not possible. The lessons on the website were also designed to be able to create learning kits that could be used at a distance that could be used even as we pivoted to a virtual platform. These kits and other resources show the abundance of resources that 4-H and VCE provide to the communities, and the ability to adjust and support during this time of virtual programming and learning.</p> <p><b>Results:</b> Through a partnership between Extension Agents and Extension Specialists over 400 resources, lessons, activities, and videos were made available to teachers and youth serving professionals through the Virginia 4-H Resources for School Enrichment. Approximately 80 educators from 54 counties and cities across the commonwealth registered to use the website.</p>	
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		<p>The goal of those registering for the resources was to meet 39,547 youth over the course of the school year. Of those registered, they represented elementary teachers (20), 4-H Agents or Program Assistants (33), FCS or ANR Extension Agents (9), High School or Career and Technical Education (8), Middle School Educator (3) or Home School Education (1). Those who registered for the site used it for: 4-H School Enrichment (46), After School Programs (6), Supplemental Activities (27), Other Programming (8), and 4-H Club Curricula (2). Of the users using the website and resources, the majority were from the farm/rural (63) which reaches one of the focus audiences of underserved individuals, especially those without reliable internet access. The remaining site users were from towns (6), suburb (6), or central city (5). Over the past 2 months since the launch in October 2020, the site has had 295 users, with 471 sessions. Of the 471 sessions, 176 are from returning users. This shows that those who are using the website, are coming back to continue to use the website. A spike in users was seen in October when the site launched, and has stayed steady with usage in November and December.</p>	
86.	<p><b>2020 V3: Virginia Virtual Volunteer Conference</b></p>	<p><b>Relevance:</b> Since the earliest days of the program, volunteers have helped form the organizational backbone that allows 4-H to be successful. 4-H volunteers serve in a wide variety of settings including club leaders, project leaders, camp staff, chaperones, and mentors just to name a few. Virginia 4-H operates under the ISOTURE Model of Volunteer Administration and Development first set forth by Dr. Robert Nolan at North Carolina State University in 1969, and later adopted by National 4-H Headquarters at the USDA under the leadership of Dr. V. Milton Boyce in 1971. Under this model, local Extension Agents work with support from state specialists to identify, select, orient, train, utilize, recognize, and evaluate programmatic volunteers.</p>	<p>Youth Development</p>

		<p>As a support mechanism for this effort, the Virginia Association of Adult 4-H Volunteer Leaders was organized to serve both as a coordinating body for all 4-H volunteers providing liaison roles with state and district Extension faculty, and also to serve as a vehicle to disseminate training to volunteers. Until 2020, this has normally occurred through bi-annual traditional conferences held throughout Virginia, with locations and hosting responsibilities rotating throughout the Extension districts. District level meetings are also held which support these goals to a smaller extent. With the onset of the COVID-19 pandemic, it became clear that the traditional VAA4-HVL conference being planned for Bristol, Virginia could not be held. However, the suspension of in-person 4-H programming did not mean that all programming and training would simply cease to function. This provided an opportunity to reimagine volunteer training in a virtual setting.</p> <p><b>Response:</b> It was decided to plan and coordinate a virtual training conference to be held on the same day originally planned for the in-person conference. All presenters who were originally scheduled to conduct workshops at the in-person conference were contacted to see if they would be willing to alter these to virtual formats – all of whom readily agreed to do so. Other speakers and workshop presenters were recruited to provide a wide array of educational offerings that would be relevant to 4-H adult volunteers. Utilizing Zoom virtual programming technology, a day long virtual conference was planned in which twelve educational workshops were offered (four sessions with three workshops each), as well as an opening keynote, lunch and learn session, and closing capnote.</p> <p>At the outset of planning it was decided that there would be no cost to attend the virtual conference. Registration for the conference was opened to 4-H volunteers and Extension personnel nationwide. The results from this</p>	
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		<p>were tremendous, with 511 people from 26 different states registering as participants.</p> <p>The conference itself was highly successful with sustained participation throughout the day, and no technological errors to cause undue problems. All sessions were recorded and registered participants were provided access to these recordings, as well as any supplementary session information, through a designated website:</p> <p><a href="https://sites.google.com/vt.edu/v3conference/home">https://sites.google.com/vt.edu/v3conference/home</a></p> <p>The response to the conference was so well received, that it was repeated on a half-day scale for the Fall 2020 conference and there were 211 registered participants from over twenty states.</p> <p><b>Results:</b> The impact of these conferences has been overwhelmingly positive. A survey was conducted with spring conference participants which received 115 responses. Of these, 52 participants attended 5 or more sessions, and 50 indicated they had attended 3 or 4 sessions. Most respondents either agreed or strongly agreed that they had learned something new, learned about resources they can use with their 4-H'ers, plan to use these resources with their 4-H'ers, and found the workshops/speakers provided needed and necessary information.</p> <p>When asked to provide examples of new skills learned that will be used with 4-H'ers, some of the responses were:</p> <ul style="list-style-type: none"> <li>• Very simply, the virtual games. Trying to keep things fun, so that kids stay invested, is so important. I think the games learned will have a lot of impact now that meetings are held on a virtual level these days.</li> <li>• I will use the naturalist scavenger hunt! and some of the resources shared about making masks. And I will use and teach much of the fine helpful information shared so engagingly by Victoria Pavelko. Wow!</li> </ul>	
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		<ul style="list-style-type: none"> <li>• I will definitely use a lot of what I learned from the public speaking session. Also the virtual session with Erika was great and will use a lot of that and the virtual games – fantastic</li> <li>• Turning the Fog into STEAM provided lots of good ideas for future 4-H programs.</li> <li>• Zoom - this was my first experience with Zoom and I hope to use this with my club so we can stay connected during the pandemic. I want to share with them the risk management information. Most of my club are showers and I think over the years of showing we become lax in our animals, tack area, etc.</li> <li>• Learned good advice about working more effectively with teenagers. The information will come in handy since we're always trying to expand the number of teens who serve on various committees.</li> </ul> <p>The conference also filled a need to provide training and professional development to volunteers who were in need of a non-traditional setting. When asked the top reason for attending the conference, selected responses were:</p> <ul style="list-style-type: none"> <li>• I can't afford to travel and pay for the in-person conferences. This virtual option opened new doors and allowed me the opportunity to learn.</li> <li>• To learn new things for this time of virtual meetings and how to keep our kids still engaged!</li> <li>• I wasn't able to get our 4-H special interest club started before the virus hit, so I want to stay connected and keep ready for when we can recruit our kids and start. Considering we might still be even partially virtual come fall, I wanted to see what a virtual conference was like.</li> <li>• To see how you planned and executed delivery of a virtual format. For use in extreme circumstance, and for the further advantage of including more participants in training events, I am so glad you took on this endeavor so effectively!</li> </ul>	
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		<ul style="list-style-type: none"> <li>• The variety of workshops.</li> <li>• I was able to attend from home and still learn and apply to my 4 Hrs!</li> <li>• 4-H training in VA is the best, I wanted to be part of it</li> <li>• That I could attend from my residence and not have to pay for travel.</li> <li>• I don't always have the extra money to attend the training in person. I have wanted to attend for several years. The training on Saturday was super easy at home.</li> </ul> <p>In addition, 93 respondents indicated that they would be interested in attending more virtual trainings such as this conference. 23 indicated that they might be interested, and no respondents indicated that they did not have an interest. When asked how to conduct any future trainings, 47.71% indicated that they prefer trainings through Zoom (or similar virtual platforms), 19.72% would like traditional face-to-face training, while 18.81% would like pre-recorded videos.</p> <p>Beyond the results provided through evaluations, it appears that the spring conference was the first 4-H volunteer conference which shifted to a virtual format after the onset of the COVID-19 pandemic. An unintended effect of this has been that the Virginia Virtual Volunteer conference has served as a model for use by other 4-H programs also needing to migrate into virtual training formats. Georgia, Oklahoma, and South Carolina also planned virtual volunteer training conferences in 2020 based upon “the new Virginia model,” as well as some aspects of the Volunteer Conference of the Southern States. It has been very positive to know that the Virginia Virtual Volunteer Conference not only had a positive impact on its own participants from around the Commonwealth and the nation, but also on other programs within the greater Cooperative Extension System.</p>	
87.	<b>2020 Teen Summit: Empowering Youth Voice</b>	<b>Relevance:</b> Teens are the next generation, and in order to ensure we have a commitment to diversity and inclusion in the future, it is important that we	Youth Development

		<p>engage them in a movement towards an inclusive, civil society for all individuals. Teens have often mentioned that they don't have a safe place to discuss issues that are weighing heavy on their minds, such as, racial and gender inequality, environmental justice, and the opioid and vaping epidemics. 2020 has showed us the growing need for social justice programs in youth development organizations. With issues facing the United States and Virginia around social justice related topics, youth are interested, empowered, and looking to help solve these problems in their communities.</p> <p><b>Response:</b> To address this concern and need, Virginia 4-H held its second annual Teen Summit to provide teens with an avenue to discuss issues important to them and inspire them to take charge by empowering them with the skills they need to turn ideas into action. Although the 2020 event had to be held as a virtual event due to the pandemic, the teens were able to take on a more active role in the planning and implementation of the event. In the second year, our goal was to empower teens to take the lead to make the Summit an event that was planned by teens, for teens. This approach creates an opportunity for growth, leadership, buy-in, and meets the needs of teens in our program.</p> <p><b>Results:</b> For this six-hour event which occurred over four days, 127 youth and adults registered, with each day averaging 50 youth participants. The first session was focused on building community and understanding around social justice, youth empowerment, and inclusion. During this session, Saniia Hunt, Indiana 4-H member served as the keynote speaker and taught the participants how they can create change in 4-H to make the program more diverse and inclusive for all. The second session was themed around understanding social justice, equity, and inclusion and was delivered by Dr. Nia Fields who engaged the participants in discussion and interactive activities with participants learning how their voice can be meaningful tools</p>	
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		<p>for change in relations to social justice and removing barriers. The third session featured a youth panel of speakers who represented different social justice issues (LGBTQ+, Racial Equity/Racial Justice, Mental Health, and Environmental Justice) and shared their experiences with creating change in their community. The fourth session featured an adult panel (Health Equity, Criminal Justice, Mental Health, and Environmental Justice) with breakout room discussions where youth choose a topic to discuss in more depth. To ensure teens stayed and continue to stay engaged with the Summit, a Discord channel (social media platform similar to Slack) was created to allow for small group discussions around topics teens are passionate about and begin to create action plans for change. 100% of youth participants who responded to the survey stated that they learned something new from their experience and something that they implement in their community. 87% of respondents indicated that they felt motivated to make a difference after participating in the event. 93% of respondents stated that listening to the speakers and panelists inspired them to make a difference in their community. Teen participants selected the following topic areas in which they are passionate about influencing change.</p> <ul style="list-style-type: none"> <li>• Environment</li> <li>• Racial Justice</li> <li>• Education</li> <li>• Religious Equality</li> <li>• Women’s Rights</li> <li>• Disability Inclusion</li> <li>• Food Insecurity</li> <li>• LGBTQ+ Rights</li> <li>• Mental Health</li> <li>• Diversity and Inclusion in Agriculture</li> </ul>	
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		<ul style="list-style-type: none"> <li>• Inclusivity in 4-H</li> </ul> <p>Some impactful quotes noted from two teen participants include: “Thank you so much for this wonderful program! I enjoyed each day of the Teen Summit and I would love to participate in this more often! Thank you again so much for this beautiful, and insightful opportunity! I loved it!” and “This summit was AMAZING!! I am so grateful for the opportunity to attend and learn about topics from my peers as well as educated adults. I am definitely interested in attending the spring summit (hopefully in person)! I would love the opportunity to continue my involvement with 4-H and social advocacy. I feel inspired by this conference and can't wait to start a new project!”</p> <p>Statements made by three teens who served as the leads for the Summit are as follows:</p> <p>"Being on the Teen Summit Leadership Team has been one of the most impactful experiences I've had in my time in 4-H. Even as a teen my opinions are valued and I'm given the responsibility to plan and execute events. I know that the adults on our team trust all of the teen leaders and that they're there to support us when we need it. I also appreciate the impact that the subject matter of the summit has had on me and on our participants. I think it's extremely important to discuss social justice in a safe and inclusive, an environment that I believe we've been able to foster with the Teen Summit. Whether the event is your first introduction to social justice or if you're already a pro at advocacy, there's something for you to take away from the summit. Personally, I've been inspired by the work that other teens are doing in the social justice area and attending the summit has made me want to become more active in my advocacy."</p> <p>"Being on the Teen Summit Leadership Team has given me the opportunity to further my leadership skills, gain confidence in leading large groups, facilitating discussion, and taking the initiative to create an event that other</p>	
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		<p>VA 4-H teens want to attend and engage in. The commitment that all of our adult members of the team have to center youth voices have given me and my fellow members to build Teen Summit into a welcoming event where participants have the space to gain perspective and learn about Social Justice issues to create a more inclusive VA 4-H Community."</p> <p>In regards to next steps, a series of webinars are being planned to help teens carry their passion areas forward to influence change. The four webinars will focus on root causes, goal setting, resource development, and implementation. In addition, the leadership team is being expanded to include more teen voice. Applications have been distributed and returned and we received more than two times the number of applications than we have spots for, indicating the excitement for this program. Interviews will take place in 2021 and the new members will be instrumental in planning the fall Teen Summit event.</p>	
88.	<p><b>2020 Teen Cuisine @ Home: A Remote Cooking Program for Teens from Limited-Resource Families during the COVID-19 Pandemic</b></p>	<p><b>Relevance:</b> Poor dietary quality, lack of physical activity, and food insecurity are major healthy living issues facing Virginia youth, particularly for those living in poverty. Not only do these issues impact long-term health, but also physical and cognitive development and readiness to learn. These concerns have been exacerbated as a result of the COVID-19 pandemic due to changes in household income and financial stability, disruptions to the overall food supply, and social distancing requirements that limit face-to-face educational opportunities and access to food through school meal programs. Nationally SNAP benefits have reached two billion dollars per month - a 40% increase in overall monthly SNAP benefits due to increases in unemployment or underemployment status during the pandemic. In May 2020, more than 40 million Americans filed for unemployment benefits due to furloughs and job losses associated with COVID-19. Teens have not been able to participate in typical school classes during much of this time.</p>	Youth Development

		<p><b>Response:</b> Teen Cuisine is a curriculum that addresses key concepts related to nutrition, food preparation, food safety, and physical activity and targets teens in grades 6 to 12 who are eligible for free and reduced-price school meals. During the COVID-19 pandemic that resulted in social distancing measures, Virginia Cooperative Extension adapted Teen Cuisine to the Teen Cuisine @ Home program. This adapted programming gave Virginia Cooperative 4-H/FCS Extension Agents and Family Nutrition Program Assistants the opportunity to apply for programming mini-grants of up to \$1,750. These grants were utilized to offer local projects that provided Teen Cuisine programming to 303 teens from limited-resource families through remote programming and the provision of food and equipment. Grant teams delivered a minimum of six hours of remote programming (via Zoom) that included cooking/food preparation, nutrition, health, and fitness instruction as it relates to food consumption. For remote education, grant teams offered live instruction for the six lessons and included nutrition education and cooking demonstrations. Through funding provided by the National 4-H Council and support by Virginia SNAP-Ed and EFNEP, grant teams purchased cooking equipment and recipe kits for teen participants. Participant kits included basic cooking utensils and equipment as well as food for approved recipes. The kits allowed for interactive cooking and hands-on learning experiences that are essential components of Teen Cuisine. Teens gained food, nutrition, and health knowledge and learned new cooking techniques and recipes.</p> <p><b>Results:</b> Teen Cuisine @ Home programming resulted in positive impacts for youth participants who were living in poverty and with food insecurity. Following participation in the Teen Cuisine @ Home program, a sample of 150 participants (about 50%) completed a post-only questionnaire that assessed knowledge gains with cooking skills and practices, intention to</p>	
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	<p>improve dietary and physical activity behaviors, and self-reported improvements in nutrition, physical activity and food safety behaviors. Highlights from survey results indicated that 73% (n=110) of participants now plan to drink the recommended amount of water daily, 76% (n=114) plan to stay physically active, and 63% (n=94) plan to prepare healthy foods or snacks with their families. Of the surveyed participants, 81% (n=122) reported learning how to safely use a knife, 81% (n=121) reported washing their hands before cooking food, 73% (n=110) reported cooking more often at home, 74% (n=111) reported eating more fruits and vegetables, 67% (n=100) reported being more physically active and 64% (n=96) reported drinking less soda/soft drinks. Teen Cuisine @ Home provided the education to successfully improve critical thinking and practical skills of youth from limited-resource families to improve food security and dietary quality through remote education.</p> <p>Additionally, as a result of the Teen Cuisine @ Home program - one teen participant has started her own virtual restaurant (complete with business license). Customers may request that she prepare a certain food item. She then films herself preparing the food and if the customer wishes to eat the food, they can pay the teen and pick up the food at her business. She has done so well with the new business venture that she will be catering an upcoming small wedding.</p> <p>Teens and their families enjoyed and appreciated the Teen Cuisine @ Home programming. Below are quotes from families and faculty who participated in the program</p> <p>One Teen Cuisine @ Home participants said:</p> <p>“I have enjoyed making this [the orange banana smoothie]. I love cooking in my mom's kitchen. We also tried it earlier today and we did a strawberry and peach one. The banana one was the best. I love having my own kitchen</p>	
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		<p>utensils. I enjoyed the class on zoom. Thank you for allowing me to participate.”</p> <p>Parents of youth participants said:</p> <p>“Thank you all so much for offering this to the kids. My son has always been a sports kid but he absolutely loves cooking this past year and this class has cheered him up today! He's missing school and his friends, so this is perfect.”</p> <p>“I just wanted to thank you all again for allowing Madi participate in this virtual program. She has learned so much from the virtual sessions and has become a better cook. Because of this class, we are both now going to focus on becoming healthier and meal planning together. We are going to start meal planning and prepping starting next week. We would love to participate in a part 2 session if you all ever offer this class again.”</p> <p>“This program was extremely phenomenal and I am very thankful for everything that you all have done to ensure that my child was a success. In spite of this pandemic, I think that this program allowed all of the participants to have the opportunity to still engage in extracurricular activities that provided tools and strategies for them to become their own personal chefs, look at ways of becoming healthy, bringing the concept of family dining back into existence, and teaching them the foundational basics of cooking.”</p> <p>An FCS SNAP-Ed Agent indicated the following about her experience with Teen Cuisine @ Home:</p> <p>“The unexpected outcome of this program was that it engaged youth in a time when there were so few opportunities for engagement because of the pandemic. So many parents shared how excited their kids were each week to receive their new pack of ingredients, the video lesson, and the recipe. For example, one family lost their home and possessions to flooding in the</p>	
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		<p>Roanoke area in the spring on top of dealing with the pandemic. We were able to provide them with all the cooking tools they needed for the program. The mother said that her son who was enrolled in the program had been ‘extremely depressed’ for the last several months. She said that he got so excited when they got the initial supplies and food items. He asked her, after watching the lesson 1 video (featuring a chicken quesadilla recipe), what they were having for dinner. After answering that she wasn't sure yet, he said ‘I got this mom, we are having chicken quesadillas tonight!’ She said her son does NOT cook, but that night cooked everything by himself. It was the first time that she had seen him excited about anything in a very long time!”</p> <p>So even though food preparation skills could not be taught in person most of the year, the Family Nutrition Program and Virginia 4-H were still able to reach and educate families and show great impact!</p>	
89.	<p><b>2020 State Fair of VA Youth Livestock Shows "Go the Distance"</b></p>	<p><b>Relevance:</b> For over five decades, The State Fair of Virginia Youth Livestock Shows have served as the culminating activity for youth involved in livestock projects across the Commonwealth of Virginia. Virginia Cooperative Extension, in cooperation with Virginia Farm Bureau, State Fair of Virginia, and Virginia Department of Agriculture and Consumer Services (VDACS), coordinates the youth beef cattle, meat goat, sheep, and swine shows. These events provide an opportunity for youth participants to showcase their projects and demonstrate their hard work and dedication, while providing the public and SFVA spectators with an occasion to observe animal agriculture and youth livestock producers in action. Due to the cancellation of most spring livestock shows and summer county fairs, many youth lost the opportunity to market their project animals, a problem that was compounded, yet again, by the lack of available openings at VA harvest facilities. Youth found themselves facing increased expenses as days-on-</p>	Youth Development

		<p>feed stretched well beyond their expectations, and options for marketing and harvesting these projects became obsolete. As COVID restrictions and resulting cancellations impacted the youth livestock program, it became even more crucial to plan a COVID-compliant event where youth could showcase and market their projects, providing much needed hands-on participation for youth in a world turned virtual, while helping to reduce the revenue loss that many of these youth were facing.</p> <p><b>Response:</b> Preparation for the 2020 State Fair Youth Livestock Shows required a new thought process, flexibility and adaptability on the part of both organizers and exhibitors, and a commitment from everyone involved to be COVID-compliant, respecting and following all safety guidelines and policies. Communication between VCE Specialists, the Secretary and Deputy Secretary of Agriculture, Virginia Farm Bureau representatives, and leadership of the SFVA allowed for investigating every opportunity and avenue for hosting a safe event. With safety as our number one priority, the decision was made to move forward with nominations of animals, planning for the event, and securing sponsors. This year's event required more effort, in a condensed amount of time, to plan and prepare with the added safety guidelines and procedures that had to be implemented. The SFVA Youth Livestock Advisory Council, comprised of VCE specialists, faculty members, industry leaders, and parent volunteers began their work immediately following the 2019 SFVA by reviewing survey results, proposing rule changes, schedule revisions, and identifying potential judges. Much of this work had to be repeated and modified to accommodate the required COVID regulations and design a schedule that allowed us to control numbers and provide for youth and families to depart the grounds upon completion of their events. The SFVA Youth Advisory Council contributed over 150 hours of planning time, while four fundraising committee chairpersons</p>	
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		<p>nearly doubled their normal time commitment, at 100 hours, and increased their fundraising efforts to help generate funds to cover premiums that the SFVA management was not able to pay. APSC/VCE specialists and on-campus support staff members dedicated approximately 280 hours to event planning, preparation, and administrative oversight, including the time required for increased planning time and preparation to adhere to COVID guidelines. Pre-COVID, the decision was made to implement a self-nomination process that included DNA sample submission for all nomination-required entries. This decision proved to be even more prudent once COVID restrictions were put in place and limited the availability of VCE Field Faculty to safely conduct in-person nomination procedures. Potential youth exhibitors nominated 65 head of beef cattle, 372 meat goats, 459 sheep, 344 hogs qualifying them for the 2020 State Fair of VA Youth Livestock Shows. Utilizing the self-nomination process alleviated 165 hours of faculty commitment previously provided for in-person nomination sites. The actual State Fair event looked much different this year. While the layout of the Fairgrounds, lack of spectators, and strict measures to enforce mask mandates and social distancing were all new and different than past years, the exhibitors' excitement, hard work, and commitment to success, if anything, was increased. There were no outside spectators, everyone was required to wear masks and socially distance from one family group to another, animals were stalled in the barns, but all fitting and congregating took place remotely at trailers. Show rings were marked off in at least six-foot increments to indicate where exhibitors should stand, judges wore masks at all times and there was no handshaking between judges and exhibitors. VCE specialists, support staff, field faculty, and volunteers contributed over 1400 hours during the four event days to administer and deliver 26 different animal-focused shows, 16 showmanship events, 11</p>	
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		<p>costume and lead line classes, and 12 species and age specific premier exhibitor events.</p> <p><b>Results:</b> Despite the increase restrictions and mandatory COVID compliant protocols, 277 youth, representing 58 VCE Units and Virginia FFA Chapters, exhibited 857 head of beef cattle, meat goats, sheep, and swine at the 2020 State Fair of Virginia Youth Livestock Shows, thereby. Eight overall champions, two from each of the four species, sold through the Sale of Champions event and generated \$90,000 in revenue to be distributed as cash awards and scholarships to the eight overall winners, in addition to supporting the overall SFVA Applied Scholarship Fund. Nearly \$28,000 was awarded in earned scholarships to participating youth based on how their animals ranked in various classes. Despite the SFVA announcing that they would not be able to pay premiums to this year’s exhibitors, a total of nearly \$37,000 was secured by the Youth Livestock Advisory Council Fundraising Committee and supplemented by a donation from Farm Bureau Insurance. These efforts made it possible to provide each exhibitor with \$107 each, in addition to a portion of their earned premiums. The youth livestock advisory council also worked to secure sponsorship for and provide \$22,638 in awards and prizes for class winners, division and overall champions, and exhibitor giveaways. Each January, youth participants from the previous year’s Fair have the opportunity to compete for applied scholarships offered through VA Farm Bureau and the SFVA. In March of 2020, over \$24,000 in scholarship funds was awarded through this program with all of the recipients being VA Youth Livestock Program participants. Through livestock projects youth gain valuable life skills including responsibility, problem solving, time management, leadership, critical thinking, and sportsmanship. Additionally, they develop a work ethic that will be highly valuable in all facets of their life and learn the value of ethical decision making. These</p>	
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		<p>opportunities not only allow them to learn about the livestock industry, but also allows them to network with other youth who are interested in the livestock industry. These individuals will potentially be their partners and colleagues later in life, therefore providing contacts and connections that will serve to promote their success in the food animal industry. This year they added flexibility, adaptability, patience, grace, and understanding to the valuable set of like skills they are developing. Through the efforts of adult volunteers and VCE faculty and staff, these youth were able to participate in a safe and successful event, proving that it was possible to “go the distance.”</p>	
<p>90.</p>	<p><b>2020 Helping Youth PROSPER and Avoid Opioid and Other Substance Misuse</b></p>	<p><b>Relevance:</b> Virginia families and communities are grappling with the impact of opioid and other substance misuse on newborns, children, adults, seniors, schools, health and social service systems, the workforce, and communities as a whole. The COVID-19 pandemic has further exacerbated these impacts, with Virginia seeing a huge increase in overdose deaths from the start of the pandemic through the fall, with rates doubling in some localities. This issue continues to impact rural, urban and suburban communities across the Commonwealth. Youth themselves are not immune to the epidemic, as 13% of high school students in Virginia report having misused a prescription medication. The overall mortality rate for prescription opioid overdose in Virginia in 2017 was 7.2 per 100,000 in rural counties and 5.3 per 100,000 in urban counties. The mortality rate for fentanyl and/or heroin overdose was 4.3 per 100,000 in rural counties and 10.4 per 100,000 in urban counties. Solutions, including prevention, are needed at all levels. There are numerous prevention programs available that aim to reduce risky youth behavior, including substance misuse, or strengthen families. However, surveys show that most programs lack scientific evidence that they’ll be effective. Some programs fail because of ineffective program design, poor implementation, lack of sustainability, or shifts in focus. In the end, youth, their families, and</p>	<p>Youth Development</p>

		<p>our entire society pay a great price for programs that do not work. A recent survey by the Virginia Office for Substance Abuse Prevention (Virginia Office for Substance Abuse Prevention) confirmed remaining gaps in youth prevention programs in most communities.</p> <p><b>Response:</b> To address the need for effective, sustainable prevention programs for youth, the team identified PROSPER (PROmoting School-community-university Partnerships to Enhance Resilience) as the evidence-based delivery system for supporting sustained, community-based implementation of scientifically-proven programs for youth and their families. Federal funding was secured to expand PROSPER to four additional localities including Henrico, Louisa, Prince George and Sussex. Community teams were formed in three sites and spent months working at the local level to implement the evidence-based Strengthening Families Program for youth ages 10-14 (SFP 10-14) and the evidence-based Botvin LifeSkills Training Program (LST) for middle schoolers. In addition to creating and supporting productive, high-functioning PROSPER community teams, all sites identified and recruited three facilitators to be certified and lead SFP 10-14. Twenty individuals from the current CYFAR project and local PROSPER teams completed the three-day face-to-face certification training. Three sites were slated to begin sessions in March 2020 when the pandemic shifted plans. One site, Louisa County, graduated a group of families prior to the COVID-19 pandemic. As we pivoted to support families and youth with the sudden closure of schools and facing other life disruptions, agents and grant staff supported school packet pick-ups, school lunch distributions, and food pantry sites, providing informational resources and 4-H youth activities kits as appropriate. With all in-person programming halted, we launched a series of “rapid-response” weekly webinars addressing current needs stemming directly from the COVID-19 pandemic. To date, 33 distinct sessions have</p>	
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		<p>been held, with topics including “Working and Schooling Remotely from Home,” “Teens, Anxiety and Stress,” “Strengthening Family Relationships During Tough Times,” “Teen Mental Health in Challenging Times,” “Guiding Children and Teens Through Uncertain Times,” and “K-12 Schooling Q&amp;A Session with Virginia Teacher of the Year.” The typical audience size was just over 200. Members of this grant team engage their communities with the series through emails, social media posts, and personal invitations as a strategy for equipping families, educators, and service providers with tools and resources to address the most immediate pressing needs stemming from or exacerbated by COVID-19. The sessions have reached a minimum of 2600 distinct participants. During fall 2020, schools in three sites were slated to begin implementing the LST program. Grant staff and agents endeavored to connect youth and families with other available resources and virtual programs, such as 4-H Virtual Camp and 4-H Intermediate Congress in an effort to support needs for social connection and support. Notably, given the challenges facing schools in fall 2020, LST in-school programming has been delayed. In the meantime, teachers slated to be trained and then teach the curricula have been identified in most sites. We stayed on track with getting all grant staff, as well as the teachers from one locality trained to teach the LST program in-person, virtually, or in a hybrid mode. A second site will complete teacher trainings in January 2020. The trained schools anticipate implementing the program during the second half of the 2020-21 school year. To provide support for school staff gearing up for implementation, we held a virtual meeting with teachers in one of our first grant sites, namely Henry/Martinsville, who pivoted to deliver LST in their health classes this academic year, sharing tools, tips, and lessons learned. We have also produced a document linking the school-based LST program to Virginia's Standards of Learning.</p>	
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		<p><b>Results:</b> VCE personnel and partners have been trained and begun implementation of the family-based Strengthening Families 10-14 program for 6th graders and their families in Louisa County. Three localities were beginning in-person SFP 10-14 programming in March 2020, but programming was halted with the onset of COVID-19. Evaluation outcomes yielded promising results and underscored the need for and effectiveness of the model in Louisa County. The program was delivered over a period of two months and included a total of seven sessions. At the sessions, families first joined for dinner together. Then parents and youth met in separate groups for the first hour and together as families during the second hour to practice skills, play games, and engage in family projects. The sessions are highly interactive and include roleplaying, discussions, learning games, and family projects. Results from this first offering are encouraging.</p> <p>Program evaluation data was collected and revealed that both youth and parents were favorably impacted by participation in the SFP 10-14 program. Notably, statistically significant changes should be considered with great caution due to the small sample sizes of each group. However, change in the favorable direction is encouraging. Specifically, on retrospective surveys, youth participants reported the following more optimal changes at a statistically-significant level. I do things to help me feel better when I am under stress; I appreciate the things my parents/caregivers do for me; We have family meetings to discuss plans, schedules, and rules; I know how to tell when I am under stress; I know there are consequences when I don't follow a given rule; My parents/caregivers and I can sit down together to work on a problem without yelling or getting mad; I know the qualities that are important in a true friend; I know what my parents/caregivers think I should do about drugs and alcohol; I feel truly loved and respected by my parents/caregivers. Parents indicated that they are more likely to: Wait to</p>	
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		<p>deal with problems with my child until I have cooled down; Remember that it is normal for children to be harder to get along with at this age; Help my youth understand what the family and house rules are; Let my youth know what the consequences are for breaking rules; Find ways to keep my child involved in family work activities, like chores; Talk with my child about his or her future goals without criticizing; Often tell my child how I feel when he or she misbehaves; Spend special one-on-one time with my youth; Let my youth know the reason for the rules we have; Listen to my youth when he or she is upset; Talk with my child about ways to resist peer pressure; Give compliments and rewards when my child does chores at home or learns to follow rules; Explain to my child the consequences of not following my rules concerning alcohol use, even if they have not started yet. These changes reported by youth and their parents/caregivers are related to decreased risky behaviors among youth. Anecdotally, participants were also asked "What was the most valuable thing(s) you learned during this program?" The youth responses were: That though we (my parents and me) might fight with each other we still love each other; Don't do drugs kids; How to tell someone no; Be nice to people and how to deal with stress; Life is hard, but no matter what someone will always love you. The adult responses were: Rules and consequences; The importance of love and limits; Ensuring I take time to think and cool off before discussing situations, and making sure I follow through with the consequences; the need for limits and family expectations; I need to be a better listener; I need to communicate more effectively- explain myself better to my child so she has a better understanding. Moreover, in response to COVID-19, we launched a series of "rapid-response" weekly webinars addressing current needs stemming directly from the COVID-19 pandemic. To date, 16 distinct sessions have been held, with topics including "Working and Schooling Remotely from Home," "Teens,</p>	
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		<p>Anxiety and Stress," "Family Fun for All Ages," "Resiliency in the Face of Adversity," "Moving Forward (as we Reopen)," and "Listening Skills to Support Racial Understanding." The typical audience size is just over 200, with the largest sessions topping out at over 500. The sessions have reached a minimum of 2600 distinct participants. Post-webinar surveys have been administered for the most recent webinars. On a scale of 0 to 10, with 0 being the least (e.g., not at all useful) and 10 being the most (e.g., extremely useful), across 476 responses, on average participants rated the webinars as very useful and indicated they were likely to apply something they learned, either in their personal or professional lives.</p>	
<p>91.</p>	<p><b>2020 Health Rocks!: Making a Difference Preventing Substance Use Among Youth</b></p>	<p><b>Relevance:</b> The World has a health crisis. Smoking, binge drinking, and illegal drug use cause catastrophic effects to health. Although, Virginia is lower than the national averages, Virginia has not escaped this crisis. The Centers for Disease Control and Prevention reported that in 2019, 20% of Virginia high school students used electronic vapor products at least one day in the past 30 days, 4.7% of high school students in Virginia smoked cigars, cigarillos or little cigars on at least one day in the past 30 days, and 3.8% of high school students in Virginia used chewing tobacco, snuff, or dip on at least one day in the past 30 days, matching the national average. Substance abuse among adolescents is linked to depression, unintentional injuries, suicide, and homicide.</p> <p><b>Response:</b> In an effort to address the negative effects of drug, alcohol, and tobacco usage among youth, Virginia 4-H utilizes the Health Rocks! curriculum supported by a grant from National 4-H Council. Health Rocks! is an experiential education program facilitated by teen/adult leadership teams to help youth learn key health messages and skills, with special emphasis on prevention. Through the power of youth/adult partnerships, Health Rocks! instills in youth participants invaluable confidence and</p>	<p>Youth Development</p>

		<p>communication skills necessary to make responsible decisions and develop the internal strength to resist risky behaviors. In addition, this program promotes healthy lifestyle choices and is targeted at youth between the ages of 10 and 15.</p> <p><b>Results:</b> In Virginia, 3,146 youth completed 10 or more hours of Health Rocks! programming despite the COVID-19 pandemic and shutdown. Of that total, 48% were girls and 52% were boys. Youth participants varied in grade levels. The majority of youth were in elementary school (55%), followed by middle school (44%) and high school (1%). Of these participants, the following increases in knowledge and behavior change were noted from evaluation data.</p> <p>After participating in the program, 85% of participants know that people who smoke or do drugs can have serious relational consequences (e.g. ruined relations what family and friends); 95.0% of participants are aware of the physical health consequences (e.g. die from lung cancer); and 88% of participants are aware of the cognitive consequences (e.g. have illusions). Nine out of ten youth participants in Virginia disapproved of engaging in risky behaviors related to substance use. Most of them reported intent to avoid underage tobacco use and positive health-related behavior change. They expressed confidence (94%) that they would be able to say “no” if other people, such as their friends or peers, offered them drugs and that they would not choose drinking or smoking to deal with stress. In addition, 79% of youth participants were confident that they would be able to deal with stress by using stress management skills, such as talking about their problems with someone they trust.</p> <p>After participating in the program, over 94% of youth participants demonstrated social competency, volunteerism, self-confidence and strong values. An overwhelming majority showed intent to pursue healthy</p>	
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		<p>behavior/avoid risky behavior. Virginia participants reported a consistent increase in knowledge about smoking, drinking, and other drug use after training. Health Rocks! training help youth learn skills in dealing with peer pressure and stress, in making good decisions, and improve their self-values. Regarding youth satisfaction with the program, 83% rated the training as interesting and 86% stated that they learned a lot during the training. Ninety-four percent said the staff members were friendly and 91% said they actively participated in the training activities.</p>	
92.	<p><b>2020 EquiSmartz Develops Life Skills</b></p>	<p><b>Relevance:</b> Virginia ranks as the 12th largest equine state in the nation and is part of the number one private industry in Virginia, Agriculture. With the changing demographics of Virginia from more rural to that of a more urban existence, the need to foster youth involvement with equine and the utilization of the interest in equine to teach necessary lifeskills is imperative. Additionally, with the cost of equine ownership on the rise, a focus on events that do not require equine ownership is critical.</p> <p><b>Response:</b> The EquiSmartz educational contest weekend offers the opportunity for both team and individual competition and learning at the Junior and Senior levels. Three contest days incorporate Horse Bowl, Hippology, Team and Individual Presentations, Public Speaking, and Horse Judging. Youth prepare on the county and district levels through training sessions and competition in order to qualify for this state level competition.</p> <p><b>Results:</b> Through the process of preparing and competing, these youth learn and hone the life skills of responsibility, planning, organization, decision making, team work, public speaking, and humility, to name a few. This year, due to COVID-19, all but one contest was delivered successfully in a virtual format. The 4-H Regional and National level contests were canceled. Fifteen volunteers and Extension agents worked to make the virtual events run smoothly to ensure a positive experience for all. Horse Ambassadors helped</p>	Youth Development

		<p>with announcing results. Many former 4-H alumni return to volunteer as judges for the youth. 4-Hers commented that the event was a fun and rewarding learning experience. Of the 23 youth surveys returned, 16 were involved in the contests and 100% rated the contests average to excellent. Those that did not compete cited reasons due to lack of interest in virtual format, covid-related issues, and lacking reliable internet connectivity. As a consequence of moving to a virtual format our numbers took a drastic dive, however we felt that the contests were the best quality and experience we could provide the youth. Upon our initial registration for the in-person contests there was a total of 169 youth entered in one or more events making up 394 total entries over both contest weekends. Upon conclusion of the five contests, our numbers shifted to 115 total youth entered and a total of 165 entries. The volunteers and agents provided approximately 179 hours, not including two paid 4-H Horse program event managers.</p>	
<p>93.</p>	<p><b>2020 4-H Mindfulness Mondays Series offers Support for Youth and Families during the COVID-19 Pandemic</b></p>	<p><b>Relevance:</b> The COVID-19 pandemic has disrupted the lives of Virginia’s youth and families creating a great deal of stress and uncertainty. The closure of Virginia’s schools has created many challenges for families and has disrupted the way that children typically learn, grow, play, manage emotions, exercise, and interact with one another. In addition to school closures, youth and families have missed out on many important milestone celebrations such as birthday parties, graduations, summer camps, vacations, holiday plans, and participation in group activities and sports. Further, some young people have also experienced a loss of safety and security due to the economic stress that many families have experienced because of job losses. According to the Centers for Disease Control and Prevention, the social, emotional, and mental health of young people has been greatly impacted by the pandemic. When children and adolescents experience trauma at this developmental stage it can continue to affect</p>	<p>Youth Development</p>

		<p>them across their lifespan leading to increased rates of depression, anxiety, post-traumatic stress disorder, and other mental illnesses.</p> <p><b>Response:</b> A team was formed to focus on conducting virtual programs for Mental Health and Healthy Living to provide support for youth experiencing mental health challenges during the Covid-19 pandemic. From April to June, weekly Mindfulness Monday sessions were held via Zoom and Facebook Live ranging in topics from mindful eating, gardening, yoga, and more. Starting in July to September, the program continued biweekly with more topics on mindful eating, managing stress and emotions, and others. In response to the school year starting, the team decided to create a special series around the upcoming holiday season from November to December. A total of 20 sessions were conducted during this time period via Zoom and Facebook Live.</p> <p><b>Results:</b> Through these sessions, followers of Virginia 4-H and the public were taught coping strategies and virtual teaching tools and ideas. As a result, a total of 34,665 individuals were reached on our social media platforms (Facebook and Instagram) and through live Zoom sessions. In addition to this reach, these videos received 2,296 total engagements on social media, including reactions (likes), shares, comments, and clicks. Some of the comments received include: thank you, great session, I learned a lot, and can't wait to try this at home. For the holiday series, we asked three evaluation questions and from those who responded, there was consensus that they were inspired to use what they learned, they understood the importance of connecting with themselves and/or others, and that they are very likely to recommend the Mindfulness Monday Holiday sessions to others.</p>	
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