



Transportation and Marketing Specialty Crop Block Grant Program

Fiscal Year 2019 Description of Funded Projects

Number of Grants Awarded: 56

Number of Sub-award Projects: 717

Amount of Funds Awarded: \$72,487,215.28

For more information, please visit the program's website: <https://www.ams.usda.gov/scbpg>

NOTE: The project descriptions below were provided by the grant recipients. (File updated October 21, 2019)

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Alabama Department of Agriculture and Industries	\$481,953.96	1. Statewide Marketing Campaign to Increase Consumer Awareness and Sales of Alabama Specialty Crops	The Alabama Department of Agriculture and Industries (ADAI) in partnership with the Alabama Farmers Federation (AFF) and Auburn University, Department of Agricultural Economics and Rural Sociology Department (AU) is requesting funds to implement a statewide marketing campaign of Alabama specialty crops to increase consumer awareness through point of sale, social media and advertising efforts. This statewide promotion effort aims to increase consumer awareness that local produce is available and identify Alabama producers where direct purchasing can be conducted. Producers will capitalize on recognition and consumer awareness of their local product, helping them compete against heavily subsidized foreign producers.	\$229,764.54

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Alabama Department of Agriculture and Industries	\$481,953.96	2. Establishment of a comprehensive peach cultivar evaluation to improve sustainability of peach operations	Alabama Cooperative Extension System and Auburn University seek to enhance the competitiveness of Alabama cultivated peaches and nectarines by critically assessing environmental impact on fruit production of selected cultivars. Our goal is to develop a website the public can access detailing cultivar performance and recommendations. The cultivar website will pinpoint the most productive of the established cultivars as well as newly released cultivars and experimental lines. The website will also provide critical information about fruit characteristics such as size, shape and color as well as nutritional and organoleptic quality based on phenolic content all of which will serve as criteria for identification of superior selections.	\$20,162.90
Alabama Department of Agriculture and Industries	\$481,953.96	3. Mobile Classroom Honey Processing Unit	Claybird Bees Education Association (CBEA) will lead this project to maintain, supervise, and teach through the use of a first-time Mobile Classroom Honey Processing Unit (MCHPU) to provide a new student/adult beekeeper classroom with hands-on education regarding the importance of all aspects of honey bees, and to develop written process control practices for honey processing. This project will provide student/adult novice beekeepers and veteran local honey producers a sanitary, high yield honey harvesting equipment/teaching facility, while emphasizing food safety through increased knowledge and use of specified procedures.	\$24,321.00
Alabama Department of Agriculture and Industries	\$481,953.96	4. Alabama Greenhouse Vegetable E-Book	Alabama Extension will contract with Alabama Department of Agriculture to produce a Greenhouse Vegetable E-book. The production and publication of this book will increase the number of successful hydroponic greenhouse enterprisers by providing interested persons critical information associated with starting a successful greenhouse vegetable business. The goal is to provide a free comprehensive guide to developing a successful greenhouse vegetable enterprise in the form of an E-book. Funding of this project by the Alabama Department of Agriculture and Industries and the USDA-AMS, will lead to a significant return as this E-book will be the cornerstone for information that will help spur expansion of the greenhouse vegetable industry in Alabama.	\$24,933.58

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Alabama Department of Agriculture and Industries	\$481,953.96	5. Plant Something: Alabama Phase 2	The Alabama Nursery & Landscape Association (ALNLA) will expose consumers to the national Plant Something marketing campaign further developing and promoting the informative and inspirational consumer horticulture website, PlantSomethingAlabama.com, created with Phase 1 grant funding. By increasing consumer awareness of the benefits of gardening, best gardening practices, and discovery of local Independent Retail Garden Centers, the purpose of this project is to increase sales of Alabama grown ornamental, floriculture, and vegetable specialty crops through second phase development and promotion of the PlantSomethingAlabama.com website.	\$25,000.00
Alabama Department of Agriculture and Industries	\$481,953.96	6. Utilizing Enhanced Educational Techniques in Teaching Participants to Successfully Cultivate Specialty Crops	Petals From the Past nursery and USDA Good Agricultural Practices certified fruit farm will address the need for more hands-on learning opportunities for the homeowner who wants to successfully grow, harvest, and prepare fruits, vegetables, herbs, and ornamentals in their home gardens. This project aims to enable the home gardener/small farmer to successfully grow and maintain specialty crops including fruit, vegetable, herb, and ornamental gardens through a multipronged approach, including monthly educational programs conducted both on and off site, demonstration gardens, cooking demonstrations, festivals, educational videos, and guidance through social media.	\$24,999.00
Alabama Department of Agriculture and Industries	\$481,953.96	7. Kiwifruit Pollination in Alabama: Wild Bees	Auburn University will conduct pollinator research to identify bees most important to kiwifruit pollination. Kiwifruit growers currently employ managed honey bee and bumble bee colonies for pollination services. However, no information exists on the efficiency of these managed bees, particularly compared to unmanaged wild ones, to kiwifruit pollination. Specifically, we plan to (1) Identify and quantify pollen forage sources of managed honey bees and bumble bees employed for kiwifruit pollination and (2) Quantify potential pollen transfer efficiency of managed and wild bees visiting kiwifruit. This project will establish data to a change in action (medium-term outcome) concerning kiwifruit production that will improve crop yields and economic returns (long-term outcome).	\$24,348.05

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Alabama Department of Agriculture and Industries	\$481,953.96	8. Establish "International Microgreen Growers Association" to Provide Solid Foundation to Promote Specialty Crops of Microgreens	Microgreen Enterprises Inc. and the University of Alabama (hereinafter UA) are leading this project to establish a cataloged database of global researched studies and scientific literature on microgreens to provide IMGAs with valuable information for its microgreen growers, suppliers, stakeholders, consumers and other interested parties worldwide. The objective of this project is to be recognized by the U.S. Department of Agriculture as the center for all microgreen historic scientific information and new information on the safety and health benefits to enhance this specialty crop and create competitive, responsible standards within this new industry.	\$24,121.72
Alabama Department of Agriculture and Industries	\$481,953.96	9. Eat Local!	The University of Alabama will lead this project to conduct a theory-based qualitative study to examine which psychological factors are tied to students' perceptions regarding consuming Alabama specialty crops. This project aims to create awareness of Alabama specialty crops (locally grown fruits and vegetable) among The University of Alabama students and promote Alabama specialty crop consumption among them. Based on the study results, this project intends to develop a theory-based education program using social media as a platform to educate students, increasing their awareness and knowledge regarding Alabama specialty crops.	\$24,996.00
Alabama Department of Agriculture and Industries	\$481,953.96	10. Alabama Urban Forestry Association Specialty Crops Education, Promotion and Planting Program	The Alabama Urban Forestry Association (AUFA) will lead this project with state and municipal partners, educators, and other community-based charitable non-profits to accomplish many educational and promotional activities while creating and improving multiple community gardens. through the Specialty Crops Education, Promotion and Planting Program (SCEPPP). The specific goal of this project is to increase industry and consumer awareness of Specialty Crops, provide formal and informal training classes and hands-on gardening projects.	\$23,550.00
Alabama Department of Agriculture and Industries	\$481,953.96	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$35,695.74

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Alaska Division of Agriculture	\$253,015.22	1. Evaluating Locally Grown Apples to Produce Quality Juice	The Agricultural and Forestry Experiment Station (AFES) at University of Alaska Fairbanks (UAF) will examine Alaska grown apples and assess their properties for processing into apple juice. Understanding the quality of various apple varieties is needed to develop specialty juice blends and products for local markets. Diversification is expected to increase production, marketing shares and consumer access to locally grown apple products.	\$58,242.00
Alaska Division of Agriculture	\$253,015.22	2. Alaska Seaweed Product Development and Market Assessment	The Alaska Fisheries Development Foundation (AFDF), in collaboration with Alaska Sea Grant and McDowell Group, will help expand the seaweed industry in Alaska through new product development and market assessment related to seaweed products in the domestic market in order to overcome the current bottleneck for farmers between harvest and sales, and reduce risk for business to enter the seaweed processing and sales sector. Results will be disseminated to stakeholders in order to guide further industry development.	\$30,333.00
Alaska Division of Agriculture	\$253,015.22	3. Feasibility Study on Current and Potential Economic Impact of Commercial Mushroom Cultivation in Southeast Alaska	The Southeast Alaska Watershed Coalition will conduct an economic impact study to assess the current and potential demand, costs, and viability of commercial mushroom cultivation in Southeast Alaska. The study will be conducted through surveys and in-person and telephone interviews with Southeast Alaska consumers, grocery stores, restaurants and other retailers, local food markets and food hubs, Southeast produce growers who are considering commercial production, and industry experts in the Pacific Northwest. Results of the study will be disseminated via a comprehensive report published and posted online as a free resource on the website of the Southeast Alaska Watershed Coalition, Salt and Soil Marketplace, and partner websites that include the Sustainable Southeast Partnership, the Alaska Food Policy Council, and the Sitka Local Foods Network. The final report and a one-page infographic handout summarizing key points will be shared with stakeholders and distributed via email, social media, and print to those who participated in the study, along with current producers in Southeast Alaska. The report and summary will also be shared at relevant local food and producer gatherings, such as the 2021 Southeast Alaska Farmers Summit, and the 2021 Alaska Food Policy Council conference.	\$27,489.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Alaska Division of Agriculture	\$253,015.22	4. From Seed to Harvest - Identifying the Basic Agricultural Determinants of Successful Rhodiola Rosea Cultivation in Alaska	Together with several Rhodiola Rosea growers, Alaska Rhodiola Enterprises will partner with the University of Alaska Fairbanks (UAF) and the Alaska Plant Materials Resource Center (PMC) to research best agriculture practices to ensure high quality Rhodiola Rosea plants for commercial cultivation in Alaska. We will disseminate these findings to the Alaskan agriculture community via our website, farm publications, and grower meetings. The PMC will start with careful seed selection to develop high quality plants. Alternative indoor methods for year-round seedling production will also be investigated. Using fields at the UAF experimental farm and other locations, test plots will be established to determine soil conditions that promote growth. Methods to control weeds will be investigated as well. And to determine best harvest time (for maximum rosavin concentrations), serial random root samples will be chemically analyzed throughout the summer from a field of mature plants.	\$22,525.00
Alaska Division of Agriculture	\$253,015.22	5. Graduate Student Mini-Grants for Specialty Crop Projects	The State of Alaska Division of Agriculture will institute a program to promote Graduate Student Projects with the aim to increase the support university students and new research on specialty crops throughout the regions of Alaska. These mini-grants would offer support to graduate students' projects who wish to tailor specific research projects with the results benefiting the Specialty Crop industry.	\$63,043.13
Alaska Division of Agriculture	\$253,015.22	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$46,331.34
American Samoa Department of Agriculture	\$282,206.61	Leveraging Specialty Crops to Access the Dietary Supplement Market	The American Samoa Government Department of Agriculture (ASG DOA) will focus on supporting the growth of specialty crops, specifically those with high demand in the dietary supplement market, through new and existing farmers. Key specialty crops include, but are not limited to: turmeric, vanilla, cacao, soursop, nonu, ava, and others.	\$282,206.61

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arizona Department of Agriculture	\$1,563,580.76	1. Continuation of GHP/GAP Certification Cost-Share Program	The Arizona Department of Agriculture's Agricultural Consultation and Training (ACT) division will offer and provide a certification fee, cost share reimbursement program for fresh fruit and vegetable producers/growers, distributors, wholesalers and handlers that use one of the qualifying GAP/GHP Audit Services.	\$14,400.00
Arizona Department of Agriculture	\$1,563,580.76	2. Enable Local Testing of Pathogens in Specialty Crops	The Arizona Department of Agriculture (AZDA), State Agricultural Laboratory (SAL) will hire an ISO Accreditation consultant to perform training and a pre-accreditation audit to identify and close gaps in pursuit of ISO 17025 accreditation. Upon completion of this project, SAL will be positioned to successfully apply and receive the accreditation required by the Food and Drug Administration (FDA) for testing required by the Food Safety Modernization Act (FSMA).	\$20,000.00
Arizona Department of Agriculture	\$1,563,580.76	3. Enhancing the Educational Aspect of Southwest Horticulture Magazine	The Arizona Nursery Association (ANA) will use these grant funds to enhance the educational aspect of Southwest Horticulture magazine to increase the value of the publication for the nursery industry. To accomplish this, ANA will add specific pages each month where relevant and timely research, disease, safety and regulatory articles and columns will be published to enhance the knowledge of industry professionals on these topics which are critical to their businesses.	\$20,205.00
Arizona Department of Agriculture	\$1,563,580.76	4. Latino Farmer Symposium – 2020 Focus on Specialty Crops	The Yuma Fresh Vegetable Association, in partnership with the University of Arizona College of Agriculture & Life Sciences and Arizona Western College will hold the "Latino Farmer Symposium - 2020 Focus on Specialty Crops" to enhance learning and networking with technical experts about the most pressing issues, challenges and opportunities for Latino farmers engaged in the production and/or marketing of specialty crops. Topics will include food safety, vegetable crop production and agronomic principles, use of technological advances and marketplace strategies. The event will include a town hall type forum to facilitate the identification of key issues and workable solutions for Hispanic farmers.	\$8,603.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arizona Department of Agriculture	\$1,563,580.76	5. Touring Arizona Specialty Crops	Arizona Farm Bureau will educate the public about Arizona specialty crops by developing a standards-based curriculum package, an on-line education campaign through social media videos, and Garden Grant Program to highlight the importance of specialty crops to our state’s economy and our everyday lives. This curriculum package and social media campaign will provide consumers with the story of their food. By allowing people to hear the story of the farmers growing their food, they feel more confident in the food choices that they are making for themselves and their families.	\$31,425.00
Arizona Department of Agriculture	\$1,563,580.76	6. “Adopt-A-Sonoran-Desert-Crop” Program	Ajo Center for Sustainable Agriculture and partners will implement comprehensive programming to increase awareness of, access to, and knowledge of production and consumption of the draught-tolerant and highly-nutritious heirloom crops of the Sonoran Desert by (1) leveraging efforts to market and promote heirloom Sonoran Desert crops; (2) expanding availability and access to these particular specialty crops; and (3) offering technical assistance to the heirloom crop producers. The project aims to increase the sales of these crops by at least 20 percent over the next two years, increase consumption, access and awareness of the crops by reaching at least 50 chefs, 2,000 youth, and 10,000 adults through marketing and outreach campaigns, and at least 100 growers through 4 plant releases, technical assistance and trainings. The program will also increase rural and urban careers and jobs, including small businesses.	\$99,800.00
Arizona Department of Agriculture	\$1,563,580.76	7. Farm Fresh Forks, A Vegetable Tasting Experience	The Yuma Fresh Vegetable Tasting Association will increase consumption of specialty crops through the Farm Fresh Forks program, a specialty crop tasting experience at a minimum of 8 local restaurants. The goal is to increase nutrition knowledge and consumption of specialty crops through introducing them to the crops, cooking and preparing techniques and recipes and tastings in local restaurants.	\$62,071.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arizona Department of Agriculture	\$1,563,580.76	8. Assessment of bacterial and viral pathogen die-off on specialty crops	The University of Arizona will study the effects of environmental conditions on the survival and persistence of bacterial and viral pathogens on specialty crops. Based on the results of numerous previous studies conducted by our research group and others, three key environmental parameters have been identified that appear to be the most important factors affecting the survival and persistence of bacterial and viral pathogens on crops: the temperature, the relative humidity, and the amount of solar radiation exposure. The proposed study will therefore examine these three parameters in carefully controlled experiments to quantitatively determine their effect on bacterial and viral survival on produce.	\$79,714.00
Arizona Department of Agriculture	\$1,563,580.76	9. Advancing Disease Management Tools for Fusarium Wilt of Lettuce	The University of Arizona's Yuma Center of Excellence for Desert Agriculture (YCEDA) has partnered with Arizona lettuce industry cooperators, TriCal Diagnostics, and UA Cooperative Extension researchers to improve disease management of Fusarium wilt of lettuce. The project will improve evaluation methods by adding a disease severity rating; evaluate the soil populations of Fusarium oxysporium f.sp. lactucae, the causal agent of Fusarium wilt of lettuce to corroborate disease severity ratings; and new cultural methods for disease control. Trials will be conducted, and results will be widely disseminated to the Arizona lettuce industry through reports, seminars, electronic media and field days to aid in disease management decisions.	\$82,799.00
Arizona Department of Agriculture	\$1,563,580.76	10. Application of bovine viruses/fecal sterols to determine contamination source	The University of Arizona will study bovine viruses and fecal sterols/stanols to identify and quantify bovine contamination in irrigation waters from two different irrigation districts in Arizona characterized by intensive cattle feedlots operations. This study addresses two of the new food safety requirements established by Members of the Arizona Leafy Greens Marketing Agreement to limit the occurrence of E. coli O157:H7 in crops planted near concentrated animal feeding operations: (i) mandatory traceability measures and (ii) a 1,000-foot minimum buffer zone between growing fields and feedlots with 1,000 or more animals. The evaluation of viruses and fecal sterols/stanols in irrigation waters will provide a better characterization for the required safe setback distance.	\$97,065.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arizona Department of Agriculture	\$1,563,580.76	11. Arizona Grapevine Trunk Disease Survey	The University of Arizona will mitigate grapevine trunk diseases (GTDs) by : 1) surveying Arizona vineyards to determine how prevalent the various diseases are and what fungi are commonly associated with GTDs , 2) monitoring fungal spore dynamics to identify low risk infection periods that could be used by growers to improve disease control by alteration in the pruning timing, fungicide application timing, and vineyard management practices, and 3) educating growers and Pest Control Advisors on the biology, epidemiology and management of GTDs in vineyards. The ultimate outcomes are reduced yield loss, reduced fungicide costs and increased profit and viability of vineyards	\$65,686.00
Arizona Department of Agriculture	\$1,563,580.76	12. Canal Sediments as Reservoirs of Pathogenic Bacteria in Irrigation Systems	The University of Arizona will develop a model designed to reduce the risk contamination of romaine and iceberg lettuce by applying an advanced hydrodynamic and sediment transport model. The goal of this study is to identify factors, which could result in the development of areas within irrigation canal sediments leading to the enhanced survival or growth of enteric bacteria. Factors to be studied include nutrients in the sediment, composition of the sediment, and its temperature. The results will be integrated into a computational model that simulates flow, sediment, microorganism interaction (growth/survival) and transport processes. The model then can be used to assess the potential for sediments reservoirs of pathogenic and their location identification in irrigation canal systems.	\$66,171.00
Arizona Department of Agriculture	\$1,563,580.76	13. Determining water use of date palms	The University of Arizona will estimate annual water use of date palms using continuously recording sap flow sensors installed in the fronds of date palms. Palms will be flood irrigated. Water use of entire trees will be estimated by multiplying the water use of the target fronds by the total fronds per tree. Results will be a first step in calculating the efficiency of irrigation of palm tree orchards in Arizona. Results will be distributed to growers via e-mail, and growers will use the results to modify their irrigation to make it more efficient.	\$71,934.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arizona Department of Agriculture	\$1,563,580.76	14. Developing Bacteriocins to Prevent Infection of Greens by Human Pathogens	University of Arizona, School of Plant Sciences and School of Animal and Comparative Biomedical Sciences will develop strategies to prevent and/or control colonization of crops by foodborne pathogens, such as Escherichia coli O157:H7. The main goal in this proposal is to test whether tailocin treatment can prevent contamination of spinach and lettuce by E. coli O157:H7. A variety of other foodborne pathogens produced by our extensive library of strains will be screened. If these experiments are successful, tailocins would be a powerful new tool that could be applied to crops to prevent colonization by foodborne pathogens in the field.	\$76,703.00
Arizona Department of Agriculture	\$1,563,580.76	15. Enhancing IPM Education for the Arizona Vegetable Industry	The University of Arizona, Yuma Ag Center will enhance the competitiveness Arizona vegetable growers by further developing and maintaining a robust Integrated Pest Management (IPM) program that provide growers, PCA's and Agribusinesses with objective and unbiased information on new pest control technologies essential for the economical and environmentally sound production of high value, vegetable crops in Arizona. The objective of this project is to further enhance IPM knowledge through an extension outreach program that emphasizes the development, validation, and delivery of real time and relevant information and technologies to growers and PCAs for managing insects, plant diseases and weeds in Arizona vegetables.	\$92,588.00
Arizona Department of Agriculture	\$1,563,580.76	16. Etiology of Citrus Brown Wood Rot	In 2018, Fomitopsis meliae, a new species associated with brown wood rot on lemons, was identified as a major component of the citrus brown wood rot disease complex in Yuma. This finding suggests that previously identified Antrodia sinuosa and Coniophora eremophila might not be the primary causal agents and the etiology and ecology of brown wood rot is still poorly understood. Given this new finding, Yuma citrus growers has urged us to identify major fungi involved in citrus brown wood rot and help them identify best management practices. The University of Arizona will use a combination of survey work, fungicide sensitivity testing, and a range of glasshouse and field trials to investigate the efficacy of chemical and cultural control methods. Knowledge generated by this project will be used to educate growers and pest control advisors on effective disease management.	\$47,332.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arizona Department of Agriculture	\$1,563,580.76	17. Expanding commercial mushroom research and training programs in Arizona	This project will be conducted at the University of Arizona and is focused on advancing commercial mushroom production in Arizona. This proposal is an extension of efforts funded by the SCBGP in 2015 and 2017. Objectives for the current proposal include 1) continued research on Arizona-specific production methods for new varieties of specialty mushrooms , 2) develop Arizona-specific methods for production of Portabella mushrooms and other button types, which are not currently grown in AZ and require different production methods, 3) develop additional workshops specific to each mushroom types (focused-content workshops), 4) continue expansion of the Arizona Mushroom Growers Association (AZMGA), website, and newsletter.	\$76,343.00
Arizona Department of Agriculture	\$1,563,580.76	18. Influencing Pesticide Registration Decisions for Specialty Crops	The University of Arizona will work with the Arizona Department of Agriculture (ADA) as well as with specialty crop producers, Pest Control Advisors and applicators to maintain ongoing access to verified and improved pesticide use data, for the benefit of Arizona specialty crops industries. Outcomes of this project for specialty crop stakeholders will include increased transparency of the EPA registration review process, improved access to inform and influence pesticide registration review decisions, and ongoing access to accurate pesticide use information to support research and education priorities.	\$54,483.00
Arizona Department of Agriculture	\$1,563,580.76	19. Mitigate Fusarium Wilt of Lettuce	Arizona is the number one producer of winter lettuces in the United States, yet Fusarium wilt becomes increasingly prevalent and could limit the viability of this specialty crop in the state. Crop rotation and soil amendment are two disease management strategies with the potential for enhancing the sustainability of both conventional and organic lettuce farming in Arizona. The University of Arizona will compare the costs and benefits of using different rotation crops and mustard cover crops that reduce Fusarium wilt in conventional lettuce systems. The effects on yield, soil pathogen suppression, and soil health will be assessed and outputs shared with University of Arizona Cooperative Extension advisors, growers, and the scientific community via on-farm workshops, field days, conference presentations, and online publications.	\$76,549.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arizona Department of Agriculture	\$1,563,580.76	20. Monitoring Diamondback Moth Activity and Insecticide Resistance in Arizona Vegetables	The University of Arizona will enhance the competitiveness of specialty crop production in Arizona by developing scientifically-based approaches and tactics for monitoring diamondback moth infestations and insecticide resistance in Arizona cole crops. Specifically, research will continue to track the presence and pest-status of DBM in Arizona cole crops over the next two years through a surveillance program of year-round pheromone trapping and early season inspections.	\$61,817.00
Arizona Department of Agriculture	\$1,563,580.76	21. Quantitative Assessment of Desert and Non-Desert Landscape Tree Shade	Enumeral Research and Consulting, LLC (ERC), will enlarge an ongoing study to include traditional (non-desert-native/non-desert-adapted) species of landscape trees to assess the qualitative and quantitative characteristics of temperature mitigation of these trees' shade. This data, in combination with data from the 2018-19 study, will offer growers, landscape contractors, landscape architects, municipalities, and industry leaders a means of comparing various tree species when expanding the urban forest.	\$37,135.00
Arizona Department of Agriculture	\$1,563,580.76	22. Screening for HLB specific, high-titered monoclonal antibodies	The University of Arizona proposes to screen and identify high-titered, highly specific monoclonal antibodies against Candidatus Liberibacter asiaticus (CLas), the HLB-causing bacterium in order to facilitate the development of early and sensitive diagnosis for HLB (Huanglongbing.) HLB is also known as citrus greening and is the most destructive of all citrus diseases. The deliverables of this project are therefore expected to improve the affordability and reliability of the currently available assays for early HLB detection.	\$54,564.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arizona Department of Agriculture	\$1,563,580.76	23. Simple rapid method for detecting E. coli in irrigation water	The University of Arizona will evaluate a simple, inexpensive method to quantify Escherichia coli in water that does not require a laboratory or any specialized equipment. Under the Food Safety Modernization Act, the Food and Drug Administration is in the process of developing bacterial standards for irrigation waters to prevent the water from being a source of waterborne pathogens. E. coli has been proposed as an indicator microorganism for fecal contamination and monitoring standards have been proposed. Current methods for testing require transport to a microbiology laboratory that has the facilities necessary for processing the samples including specialized equipment and incubators. Recently, a simple test for the quantification of E. coli has been introduced for water quality testing in developing countries that does not require an incubator or any other specialized equipment. We propose to test the usefulness of this new technology for monitoring irrigation waters and compare it to an existing commonly used method.	\$69,446.00
Arizona Department of Agriculture	\$1,563,580.76	24. Water and Salt Management for Brassica Crop Production Systems	The University of Arizona's Yuma Center of Excellence for Desert Agriculture (YCEDA) has teamed up with UA and USDA Researchers, Irrigation Districts, USDA, USBR, NASA, Arizona Commodity Councils, and others to enhance the competitiveness of specialty crops through sustainable practices of specialty crop production resulting in increased efficiency. Water applied, evapotranspiration, updated ET coefficients, and soil salinity levels will be measured in order to generate data that can be used to create management tools for most desert cropping systems.	\$87,000.00
Arkansas Agriculture Department	\$353,253.44	1. Arkansas Fresh-market Blackberry Industry: Identifying Unique Cultivar Attributes and Harvest Practices that Impact Marketable Quality	The University of Arkansas System Division of Agriculture will address challenges that face the blackberry industry by identifying unique attributes and determining harvest handling procedures to increase marketability of Arkansas-grown blackberries and disseminating results through workshops, field days, and meetings. The proposed work will support expansion of the fresh-market blackberry industry and help drive marketability of this Arkansas specialty crop.	\$58,246.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arkansas Agriculture Department	\$353,253.44	2. Developing an Arkansas Specialty Crop Discovery Farm: A model for best irrigation practices	The University of Arkansas Division of Agriculture Cooperative Extension Service will develop a Horticulture Discovery Farm to demonstrate on-farm how specialty crop growers from across the state of Arkansas can better manage and conserve their water resources. The Discovery Farm will be established in conjunction with Steve and Mark Morgan of Peach Pickin' Paradise and will be comprised of data collection on how best irrigation practices impact water resources, crop production, and the surrounding environment.	\$53,177.00
Arkansas Agriculture Department	\$353,253.44	3. Developing Hops Production in Arkansas to Support Specialty Crop Growth and Diversification	The University of Arkansas Division of Agriculture Cooperative Extension Service will partner with growers and the brewing industry in Arkansas to develop research-based recommendations for commercial hops production in the state. The project will evaluate what varieties perform well in the state, develop cultural and pest management recommendations, and evaluate the aromatic qualities of the hops produced in order to increase the competitiveness of this specialty crop in Arkansas.	\$58,946.00
Arkansas Agriculture Department	\$353,253.44	4. Post-harvest Costs to Arkansas's Specialty Crops Farmers: An Interactive Tool	The Arkansas Economic Development Institute (AEDI) at the University of Arkansas at Little Rock will develop tools to guide farmers around the state improving their calculations regarding selected specialty crop post-harvest costs. The use of such a tool is expected to improve the revenue of farmers in the state, as well as to give them new information that could increase their profitability.	\$51,411.00
Arkansas Agriculture Department	\$353,253.44	5. Increasing Access and Awareness of Specialty Crops within the Farm to Institution Supply Chain	The Access to Healthy Foods Research Group (ATHFRG) at Arkansas Children's Research Institute proposes to enhance the competitiveness of specialty crops grown in Arkansas by increasing access and awareness within the farm to institution supply chain, resulting in an increase in knowledge, intent, and number of institutions offering Arkansas-grown specialty crops. The ATHFRG will conduct surveys and interviews of the current farm to institution landscape and develop and disseminate findings to key stakeholders.	\$60,605.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arkansas Agriculture Department	\$353,253.44	6. Management and survey of soilborne pathogens in Strawberry fields in Arkansas	The University of Arkansas Division of Agriculture will survey and identify the major soil borne pathogens of strawberries affecting growers in Arkansas. Plant and soil samples from strawberry fields will be collected across Arkansas in collaboration with growers, and these samples will be processed to characterize these pathogens. All data collected will be available for growers and we will analyze and summarize the results, focusing on adjusting cultural and management practices to minimize the impact of these diseases. By understanding the distribution and the impact of soil borne pathogens in Arkansas, we will identify practices that mitigate the impact of these pathogens and educate the stakeholders during extension meetings about practices that promote “soil health” and control strawberry soil borne diseases.	\$50,292.00
Arkansas Agriculture Department	\$353,253.44	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$20,535.00
California Department of Food and Agriculture	\$22,987,649.74	1. California Grownifornians	This project will execute a multi-layered promotional program that promotes in season California specialty crops and specialty crop products. To achieve this goal the project will integrate a digital media campaign, a retail promotion program, retail trade outreach, and an influencer event program called California Grownifornians Agritour 2020. The intended outcomes of the project are an increased awareness and preference by premium paying consumers for California specialty crop products. Additionally, the project will invigorate strong support for California specialty crops and specialty crop producers by the retail trade as well as realize a twenty-five percent increase in sales over prior sales of \$4 million of California specialty crops in partnership with key California retailers.	\$1,539,100.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	2. Bridging Knowledge Gaps for the Control of Microbial Hazards on Dried Fruits During FSMA Implementation	The Produce Safety Rules and the Preventive Controls for Human Food regulations have significant impacts on California specialty crops. California dried fruit producers, the leading dried fruit producers in the United States, are facing dramatic challenges due to the lack of literature about pathogen behaviors on dried fruits and the lack of standards used to conduct microbial studies to validate processing protocols. These knowledge gaps have hampered the development of food safety plans and there is an urgent need to address them. This project will bridge knowledge gaps by systematically evaluating the behavior of microbial hazards on dried fruits during storage and establishing reference protocols for the preparation of artificially contaminated fresh and dried fruit samples for validating different thermal and non-thermal treatments without impacting the chemical and physical properties of products. Outcomes will ensure the safety and enhance the competitiveness of California dried fruits.	\$149,955.00
California Department of Food and Agriculture	\$22,987,649.74	3. Small-Holder Organic Produce-Growers Educated on FSMA Requirements (SHOPER) Project	The Food Safety Modernization Act (FSMA) Produce Safety rule compliance requirements present a new and complex obstacle to start-up, small-holder Latino farm owners and agriculture professionals in a highly competitive specialty crop industry. Learning and adhering to these standards is key for small-scale farmers to survive and thrive in this new era of food safety regulation. Leveraging eight years of experience providing food safety assistance to beginning farmers, the Agriculture and Land-Based Training Association (ALBA) will address the urgent needs of small-holder-farmers for FSMA compliance assistance. Furthermore, the project will extend services to a greater number of specialty crop farmers and workforce participants. This project will provide intensive training and compliance assistance to 50 farmers on ALBA's 100-acre organic berry and vegetable farm. The project will provide mandatory FSMA training to an additional 150 regional farmers and agriculture workers and distribute food safety tools and information to hundreds more statewide through ALBA and partner networks.	\$149,999.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	4. California Food for California Kids® Culinary Academy: Enhancing Specialty Crop Preparation and Promotion in Schools	The Center for Ecoliteracy (CEL) will establish the California Food for California Kids® Culinary Academy to expand school markets for California specialty crops and promote student consumption of healthy fruits and vegetables. CEL will use a scalable and sustainable, train-the-trainer model in partnership with Frontier Energy to reach foodservice staff in the California Thursdays® Network, which represents thirty-three percent of the \$2.4 billion school meal industry. In seven workshops, foodservice staff will: 1) learn culinary techniques and plant-based recipes to enhance the flavor and student consumption of ten specialty crops; 2) obtain new skills and resources to promote specialty crops to students; and 3) engage with marketing boards to optimize specialty crop promotion and preparation. Success in increasing awareness and consumption of specialty crops will be measured through sales in lead districts, workshop participant knowledge and intention to purchase, and taste tests with over 19,000 students.	\$242,250.00
California Department of Food and Agriculture	\$22,987,649.74	5. Growing Awareness/Demand for California Grown Prunes in Prune Juice by Sharing Digestive Benefits with Consumers.	The percentage of United States households purchasing prune juice is only 3.5 percent (2018 Information Resources Incorporated (IRI) data) with most consumers 55 plus. California prune growers feel the impact of this low demand, as California grown juice is made largely from unpittable fruit. Without juice demand this fruit must be disposed of, often at a cost. United States household penetration is low, yet there is a rise in digestive health ailments and digestive health beverage consumption by younger consumers (ages 25-45) that can be leveraged to grow sales. Sunsweet, representing 65 percent of United States prune sales and 200 California prune growers, seeks to boost awareness/demand for California grown prune juice by sharing value (healthy digestive traits) via a Public Relations/digital marketing campaign. The goal is to boost California grown prune juice sales 14.9 percent by 2022, by building new consumers for California prunes and demand for higher-value prune products. As a grower-owned cooperative all earnings flow directly to California prune growers. Success will be measured by internal records and independent IRI data.	\$450,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	6. Sonoma Strong: Leveraging the California Grown Identity to Promote the Value and Quality of Sonoma Wine	A decline in Sonoma County tasting room sales over the past five years has been exacerbated by consumer misconceptions and doubt about wine quality following the 2017 fires. Declines persisted in 2018. Tasting room sales are a significant portion of direct sales for most winegrape producers and wineries and low sales impact winegrape demand. Insufficient sales of recent vintages have caused cancellations of grower contracts for current grapes and vintners need to sell current inventory before making new wine. Efforts are needed to grow new consumers and markets and combat misconceptions among existing consumers to build visits and sales. Representing all 1,800 Sonoma winegrape growers, Sonoma County Winegrape Commission will execute a campaign (ads, events, immersive experiences, podcasts) to increase awareness and demand of the value and quality of California grown Sonoma wine and grapes among consumers, media, and influencers. The goal is an approximate six percent boost in winegrape sales, benefiting growers and measured by crop reports.	\$449,444.00
California Department of Food and Agriculture	\$22,987,649.74	7. Santa Barbara County Wine Retakes Los Angeles	California wine sales in the United States grew by 24.4 million bottles from 2014 to 2016. Yet California produced wine is trending downward with sales reduced by \$52.4 million or 4.3 million fewer bottles sold. Californians are buying from competitive states and countries. Santa Barbara Wine Country is impacted by this negative trend, with a 4.94 percent decline in direct sales since 2016 due to its reliance on the Los Angeles metro area only two hours away. Santa Barbara's grape growers and wineries, most of whom are family-owned businesses are too small for distribution and depend on Direct-to-Consumer (DtC) sales for their livelihood. A focused effort targeting the Los Angeles area is needed before California loses more ground in this large, influential market. This project will reach consumers, wine trade, and media with an integrated marketing plan over a short timeframe to maximize exposure and reverse the downward trend.	\$380,780.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	8. Discovering California's Zinfandel Trail	Zinfandel's contribution to California's wine industry, lifestyle, and agricultural heritage is indisputable; however, Zinfandel growers and producers are struggling. As the only state-wide, single varietal trail, "Discovering California's Zinfandel Trail" guides enthusiasts to unique adventures and meaningful connections with Zinfandel growers and producers. Leveraging existing technologies, compelling storytelling, and real-world experiences, this project will improve the economics of growing and producing Zinfandel. By sharing positive attributes of Zinfandel winegrapes and wines (e.g., small family farms, food-pairing, and high quality) through education, marketing, and agritourism, the project will boost direct to consumer Zinfandel wine sales by eight percent and average bottle price by four percent. Benefits will translate to all California Zinfandel growers and vintners. Success will be measured using surveys and industry sales data.	\$259,113.00
California Department of Food and Agriculture	\$22,987,649.74	9. Paso Robles Wine in the Big Cities	The United States is the largest global wine market and growing, making overseas competition fierce. To compete California must maintain and grow market share by influencing the influencers. In the digital age influencers are diverse: media, bloggers, retailers, sommeliers, friends, etc., with some of the most influential located in New York, Chicago, and Washington, D.C. These cities offer a huge economic opportunity for California's wine producers based on their size, consumption behavior, the concentration of wine's target audience, and growth potential. This project will reach influencers at every touch point: media, retail, restaurants, and directly through advertising and social media. Introducing and educating wine enthusiasts about the up-and-coming region of Paso Robles, California grown wine will be top-of-mind and wine sales will grow.	\$350,285.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	10. Expanding Access and Demand for Local Produce	Mandela Partners' (MP), formerly known as Mandela MarketPlace, will increase food access points in underserved communities, strengthen specialty crop sales for small-scale farmers within a 250-mile radius of the communities served, and advance the competitiveness of California specialty crops in urban markets. The project will provide five Healthy Retail Network (HRN) program stores with in-depth technical assistance, support, and equipment to market and sell fresh, frozen, and lightly processed specialty crop products; develop a cohesive and efficient inventory management system to expand product offerings of specialty crops that bolsters sales for twenty-five HRN farmers; identify and train local stakeholders to lead community outreach to increase the visibility of specialty crops among select HRN corner stores; and support nutrition education efforts to familiarize surrounding community with health and wealth benefits of purchasing specialty crops from local, minority-operated farms.	\$218,254.00
California Department of Food and Agriculture	\$22,987,649.74	11. California Grown Figs FIT the Needs of Product Developers	Figs and fig products are increasing in popularity due to the strong nutritional profile, functionality and versatile flavor of figs. In fact, Fermenich, a leading global flavor company, named fig the 2018 flavor of the year. This is a prime opportunity, and a critical one, for California fig farmers to ensure product developers are seeking out California grown figs. While California produces 100 percent of United States figs sold commercially, a 57 percent increase in fig imports in 2017 versus 2016 further threatens the economic viability of the California fig industry. To raise awareness and drive sales of California grown figs and fig ingredients, the California fig industry is requesting grant funds for a campaign targeting food manufacturers, technologists, and chefs who influence development of thousands of new food products each year. Success will be evaluated by increased farm gate value, actual sales, shipments, and surveys.	\$449,800.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	12. Understanding the Role of Lettuce Leaf Lipid Composition in Salinity Tolerance	Increasing salinity is a problem in all major lettuce growing districts in California. Lettuce is sensitive to salinity, causing reduction in yield and affecting profits. Reports in other plant species suggest phospholipids and/or fatty acid composition in leaves to be important for tolerating salinity. This project aims to perform deep lipidomic studies to analyze phospholipid and fatty acid composition in leaves of 10 sensitive and tolerant lettuce varieties selected from a previous study. In addition, the project will screen lettuce germplasm and analyze fatty acid composition in leaves, correlating with salinity tolerance, and good seed germination under high salinity. An added advantage of this screen will be to identify lettuce varieties with high levels of healthy omega-3 fatty acids. The success of this project will be measured by identification of phospholipid and fatty acid composition ideal for tolerating salinity in lettuce, publications and citations, and outreach activities.	\$328,048.00
California Department of Food and Agriculture	\$22,987,649.74	13. Informing Vineyard Irrigation Practices Through Improved Understanding of Grapevine Physiological Responses to Heat Extremes	Future climate changes will expose vineyards to heat events of greater frequency, intensity, and duration. Grapevine cultivars are adapted to specific growing climates, and thus, likely to respond differentially to increased heat. As growers primarily respond to extreme heat with irrigation, understanding cultivar specific water demands will better inform grower decisions and increase water use efficiency. However, little information exists on current irrigation and cultivar specific responses to extreme heat. Working with industry and agency partners, this project will identify current irrigation responses to heat events, model irrigation needs under future climate scenarios, and establish long-term field experiments to quantify cultivar specific tolerances and physiological responses to heat extremes. Project outcomes will inform cultivar specific irrigation recommendations and solicited stakeholder feedback will allow for project evaluation and co-production of future work.	\$427,763.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	14. Refining Sustainable Navel Orangeworm Management in California Almond	Conventional and organic almond producers in California lack scientifically based research regarding the effectiveness of spring insecticide sprays against navel orangeworm (NOW). This proposal addresses the question of whether targeting first-generation NOW with reduced-risk or organic insecticides, applied during spring and in conjunction with NOW mating disruption, will significantly reduce damage to almond nutmeats. Research from the mid-1970s and late 1990s evaluated spring insecticide sprays. However, the development of conventional and organically-registered mating disruption, and improved monitoring tools, provide a new opportunity to develop more sustainable integrated pest management strategies for NOW. This project will conduct large-scale field trials in almond orchards under NOW mating disruption to evaluate spring applications of Intrepid (methoxyfenozide), Delegate (spinetoram), and the organically registered insecticides, Bacillus thuringiensis (Bt) and Venerate (Heat-killed Burkholderia spp.).	\$115,230.00
California Department of Food and Agriculture	\$22,987,649.74	15. Demonstration of a Pilot-Scale Sequential Direct Flame and Catalytic Infrared Dry-Peeling System for Fruits and Vegetables	The need exists to develop a new peeling method for fruits and vegetables. It is needed to replace the current lye and steam peeling methods in order to improve sustainability by reducing water use and wastewater generation. An infrared (IR) dry-peeling technology based on electric emitters was successfully developed. To minimize the operation cost and improve movement, a lab-scale, sequential direct-flame and catalytic infrared peeling system (SDFCIR) was developed that uses natural gas as an energy source and a new tomato conveying mechanism during heating. This project will further develop the technology for commercialization by demonstrating the benefits and adaptability of the new peeling technology for tomatoes by building a pilot-scale system and demonstration.	\$440,952.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	16. Optimizing Compost-Microbe Interactions to Enhance Drought Resilience and Nutritional Quality in Tomato Production	Soil biology is an integral feature of soil health and has great potential to enhance resource use efficiency in specialty crop cropping systems. In tomato production, compost can improve soil health and, possibly, drought resistance. However, the effects on certain groups of beneficial soil biota depend on compost types. Tradeoffs between compost use and soil biological ecosystem services are rarely investigated. In a controlled field-trial and in participatory on-farm research, this project will study interactions of high- and low-phosphorus (P) composts with native beneficial arbuscular mycorrhizal fungi (AMF) and commercial AMF inoculum under full and deficit irrigation. The project aims to identify practices that maximize combined benefits of compost and soil life for nutrient-use efficiency (NUE) and water-use efficiency (WUE), crop quality, and soil health in tomato production. Results will be shared with growers, specialty crop stakeholders, and scientists through on-farm workshops, online media, and a bilingual information leaflet.	\$397,442.00
California Department of Food and Agriculture	\$22,987,649.74	17. Irrigation and Nitrogen Management and Monitoring to Improve Nut Production While Minimizing Groundwater Nitrate Leaching	Growers face new regulations to minimize nitrogen (N) fertilizer use and to monitor impacts on groundwater quality. This project addresses the issue by using high-frequency low-concentration (HFLC) fertigation in orchards and by performing an unprecedented whole orchard systems analysis of N dynamics. Three monitoring systems will be used to estimate nitrate loss to groundwater: 1) mass balance [nitrogen use efficiency (NUE)]; 2) water and nitrogen flux monitoring in the vadose zone; and 3) groundwater quality monitoring. Outcomes will focus on developing improved systems for assessing groundwater impacts from specific practices, developing an in-field demonstration site, and outreach to at least 5,000 orchard growers, extension advisors, and regulatory and policy decision makers. Project success will be measured through model and field site documentation; N flux assessment from a fully instrumented, commercial, 140-acre almond orchard; employing the model to demonstrate sustainability benefits of HFLC; and adoption of tools in the agricultural industry.	\$449,675.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	18. Improving Water Use Efficiency of Cool Season Vegetable Crops	Water use efficiency is a key component of drought resilience and other agricultural water security aspects. This project will conduct a series of controlled, scientific experiments designed to quantify water efficiency in two high-value vegetable crops (artichoke and red cabbage). Replicated irrigation trials will be performed at the U.S. Department of Agriculture, Agricultural Research Service (USDA-ARS) Salinas field station. Differing water amounts will be applied by drip irrigation as a percentage of crop water use (evapotranspiration) guided by the CropManage specialty-crop web application. Crop development, soil water content, and soil nitrate will be monitored. Aboveground biomass, marketable yield, water use efficiency, and nitrogen use efficiency will be derived. The study will improve knowledge regarding water requirements for artichoke and red cabbage and serve to verify and further promote CropManage capability throughout the stakeholder community. Project success will be evaluated in terms of the number of growers adopting best practices.	\$333,435.00
California Department of Food and Agriculture	\$22,987,649.74	19. Water and Nitrogen Management Decision Support Tool for Asian Vegetables (Bok Choy and Napa Cabbage) and Bell Peppers	The majority of the vegetables grown in the Central Coast region of California are irrigated using ground water. Prolonged drought conditions and nitrate leaching have impacted the Central Coast groundwater aquifers. Growers now face reduced water allocations and stricter regulations to minimize nitrate leaching. Given the large number of crops produced and fields that must be managed, growers need a simple-to-use tool to guide both water and fertilizer management decisions. CropManage (CM) an online decision support tool, is currently used by vegetable growers on the Central Coast to better manage water and nitrogen applications. This project will expand the capabilities of CM to include additional crops such as bok choy, napa cabbage, and bell peppers and enhance critical decision support algorithms. This project will also provide support to help growers integrate CM into their farming systems through trainings and workshops that will include evaluations to determine the adoption and benefits of CM.	\$320,472.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	20. Cover Crop Strategies to Tighten Nitrogen Cycling, Save Water, and Increase Soil Carbon in Walnut Orchards	The use of cover crops increases soil carbon (C), nitrogen (N) fertility, and soil productivity, making it an appealing practice for climate change adaptation and sustainable land use. However, little information is available to walnut growers to reassess N inputs following implementation of cover cropping. The project goal is to develop management guidelines for walnut growers that use cover crops by providing information on the mineralization, distribution, and uptake of soil N, as well as water use and C sequestration. Such information is needed to predict seasonal N availability. This project will: 1) investigate the effect of cover crops on soil N transformations and water use; 2) quantify the N credits of cover crops in walnut orchards; and 3) evaluate the cost and returns of cover crop use. It is expected that N management guidelines will improve adoption of cover crops to address soil health. Extension products and education activities will inform stakeholders.	\$448,951.00
California Department of Food and Agriculture	\$22,987,649.74	21. Grazing Winter Cover Crops with Sheep to Increase Adoption in Annual Vegetable Systems PROJECT DURATION	Despite the known benefits of winter cover crops (WCC) for improving soil health and decreasing the environmental footprint of tomato cropping systems, adoption remains low among California vegetable growers due to a lack of economic incentives. Re-integration of livestock into California vegetable systems represents an opportunity to increase adoption of WCC through the generation of income from WCC grazing while augmenting the benefits of WCC's to soil health, carbon storage, and reducing tillage. However, major knowledge barriers to grazing integration exist among California growers. This project will compare the effects of grazed WCC with un-grazed WCC and winter fallow on soil health indicators including soil organic matter, nutrient cycling, and biodiversity. It will provide California tomato growers with information on benefits, tradeoffs, and the food safety risks of manure deposition associated with incorporating WCC and sheep grazers into tomato systems.	\$300,887.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	22. Optimizing Fertilization and Irrigation Recommendations in a Newly Planted Almond Orchard After Recycling	The recycling of tree biomass into the soil at the end of an orchard's life represents an alternative sustainable practice to burning or transporting debris to cogeneration plants. Growers may be reticent to implement whole orchard recycling (WOR) because it leads to decreased nitrogen (N) availability and negatively impacts young tree nutrition and growth. However, WOR also results in soil with enhanced moisture content and water retention, which should reduce irrigation demands and leaching. This project would optimize N fertilization and irrigation regimes in an experimental recycled orchard with the goal to provide growers with better guidance on managing tree nutrition and water usage and an estimate of the costs of implementing WOR. The findings will be disseminated to growers through field day events, talks, and publications. As a measure of project success, growers and orchard removal companies will be surveyed to gauge views on WOR and determine the extent of its adoption as a practice.	\$439,570.00
California Department of Food and Agriculture	\$22,987,649.74	23. Bee Where, GIS Technology to Protect Pollinator Populations for Specialty Crops	Many California specialty crops use pollinators thus, bee health is important to these crops. Even with new regulations requiring beekeeper registration to track and monitor their locations, communication is limited and slow between beekeepers, pesticide applicators, pest control advisors, and county agricultural commissioners, which can lead to bees accidentally being sprayed by pesticides. A new tool called Bee Where, a web-based Geographic Information System, brings these groups together by electronically mapping hive locations across the state. Bee Where allows beekeepers to register and plot the location of their hives electronically thereby informing relevant pesticide applicators, pest control advisors, and agricultural commissioners. This project will implement extended education training programs with industry partners, creating awareness and usage of Bee Where among beekeepers and pesticide applicators with the goal of protecting specialty crops and their pollinators.	\$90,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	24. Developing Orchard Crops and Vineyard Management Apprenticeship Program to Train Beginning Farmers and a Skilled Workforce	The goal of the Orchard Crops and Vineyard Management Apprenticeship Program is to create an effective, structured pathway to develop a skilled workforce and educate beginning farmers to replace aging farmers and farm managers. Through a combination of classroom instruction and on-the-job training (OJT), apprentices will get knowledge of crop production, processing, management, and marketing. Mentor farmers will host the apprentices and provide them with on-the-job training that will provide apprentices with comprehensive field experience. Industry and grower associations will assist to identify needs and build a network of mentor farmers. The National Center for Appropriate Technology will develop Spanish language resources and workshops to encourage socially disadvantaged farm workers (Latino) to take part in this program. A robust evaluation plan (pre/post surveys, interviews, apprentice tracking) will be used to measure project success.	\$421,873.00
California Department of Food and Agriculture	\$22,987,649.74	25. California Specialty Crop Small- and Medium-Scale Farm Food Safety Technical Assistance Program	According to 2012 agricultural census data, 22,472 farms in California need to be in compliance with the Food Safety Modernization Act (FSMA). Of those, 75 percent are small (less than \$250,000 in gross sales) and medium scale (less than \$500,000 in gross sales) produce farms. There are another 2,300 farms in California that are qualified exempt under FSMA and also need assistance. Community Alliance with Family Farmers (CAFF) will provide 680 California specialty crop producers with direct FSMA technical assistance and provide all farmers access to helpful resources. CAFF will train growers through a suite of methods: in-person workshop trainings, farmer field days, webinars, podcasts, a six-week e-course, and creation of practical resources. CAFF will track milestones completed with a subset of farmers and evaluate increased farmer knowledge through pre- and post-evaluations. The project will be successful if it reaches 680 farmers through in-person and electronic training and at least 75 percent of them increase their food safety knowledge.	\$281,231.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	26. Technical and Leadership Training: Preserving Jobs and Maintaining Winegrape Competitiveness	Labor shortage in the winegrape specialty crop industry is one of the biggest challenges facing winegrape growers today, according to the 2018 Wine Business Monthly Vineyard Survey Report. Seasonality of work, immigration laws, and competition from other industries has increased pressure on vineyard labor. Investing in Spanish-language training is vital to retaining a technically skilled workforce and ensuring the competitiveness of winegrapes. This project will foster job retention with hands-on technical and leadership training for crew leaders; labor law and human resources training for vineyard supervisors; career awareness for high-school students; and a website portal featuring Spanish-language educational materials and training resources. The goals of this project are to retain skilled workers in the winegrape industry and to introduce career opportunities to the next generation. Success will be measured through participant surveys and employer surveys on training and job retention.	\$96,609.00
California Department of Food and Agriculture	\$22,987,649.74	27. Investing in Conservation Practices Through A Farmer Demonstration Network to Make California Specialty Crops Thrive	Conservation agriculture has been shown to increase crop yields and promote climate change resiliency, making it critical to the long-term agricultural sustainability, competitiveness, and marketability of California's 400 specialty crops. There is a need to increase the adoption rates of conservation practices among specialty crop growers statewide in order to further enhance the specialty crop industry. The project will promote greater adoption and information sharing of conservation practices by new and existing specialty crop producers and will enhance the competitiveness of specialty crops by increasing the adoption of practices that improve the quality of soil health, water, climate, and nutrient smart systems for California's specialty crop production. This will be achieved by supporting the number of statewide on-farm demonstration events about conservation tools and practices, creating an opportunity to convene and train farmers, technical assistance providers and researchers, and creation of a website to increase access to information about conservation tools for the specialty crop industry.	\$306,541.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	28. Seeds of Success: Training Beginning California Organic Specialty Crop Seed Producers in Business and Marketing Skills	Organic specialty crop seed sales are projected to exceed \$1.5 billion by 2024. California is the leading vegetable seed producing state because of its ideal microclimates. California producers can satisfy a large part of the organic specialty seed market while helping meet the seed needs of organic specialty crop producers. The project will help beginning and potential organic seed producers overcome economic and business challenges by providing: 1) seed business and economics courses and tools; and 2) training in how to market to seed buyers and how to build up-stream demand from chefs and consumers. Over 300 beginning producers will benefit, with a net benefit of over \$400,000. Project success will be assessed through feedback and increases in revenue and jobs using pre- and post- survey tools.	\$266,521.00
California Department of Food and Agriculture	\$22,987,649.74	29. Control of Overwintering Olive Fruit Fly Through Soil Applied Insect Pathogenic Fungi	Olive fruit fly (OLF) is the most important insect pest of California olives. Fruit infestation can reach 100 percent if not treated. An estimated 63 percent of olives grown in California are susceptible to OLF with potential losses of over \$120 million. OLF is primarily managed with a single product, GF-120 spinosad bait, for which resistance is well documented. Control costs are significant and increasing. Danitol, the alternative insecticide, causes secondary pest outbreaks. This project proposes to evaluate insect pathogenic fungi (IPF) that are commercially available and sustainable as a control for overwintering OLF. A similar strategy has shown promising results in Spain. The project will test the efficacy of IPF products in killing overwintering OLF in the field, the persistence of IPF in orchard soil, and IPF compatibility with fungicides used to control olive knot. Project success will be evaluated by determining impact of IPF on OLF populations through lab studies and field trials in commercial orchards.	\$142,645.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	30. Scaling the Adoption of Environmentally Responsible Almond Farming Through Data-Driven Outreach, Training, and Tools	Market demand for California almonds increasingly includes environmental sustainability in addition to price and quality. To address this need, the Almond Board of California (ABC) has established four environmentally responsible farming goals to increase the adoption of environmentally friendly pest management tools, increase water-use efficiency, achieve zero waste in orchards, and reduce harvest dust. This project will implement a coordinated set of formal, social, and experiential learning opportunities for growers through workshops, field-days, printed media, and digital tools focused on Integrated Pest Management, water use efficiency, biomass and soil health, and harvest dust reduction. The success of outreach and training will be documented and evaluated through growers' in-person participation in events, use of the ABC's Sustainability Program online platform, and the number of completed orchard assessments of environmentally responsible management practices.	\$286,770.00
California Department of Food and Agriculture	\$22,987,649.74	31. Synergizing Biocontrol of Asian Citrus Psyllid and Other Sap Sucking Citrus Pests	The Argentine ant (AA) has formed mutualisms with sap sucking pests (SSP) in citrus, including Asian citrus psyllid (ACP), the vector of Candidatus Liberibacter asiaticus (CLAs) that causes the lethal citrus disease Huanglongbing (HLB). HLB is not in commercial citrus. Ants protect more than 85 percent of SSP and over 55 percent of ACP from natural enemies (NE) and are rewarded with honeydew. AA exacerbates pest infestations. Sprays for AA and SSP kill NE which cause secondary pest outbreaks and increase resistance. Biocontrol of ACP and SSP can be synergized through three management practices: 1) monitoring AA activity with infra-red sensors (IRS); 2) controlling AA with biodegradable hydrogel beads (HGB) infused with 25 percent sucrose water and 0.0001 percent insecticide (plastic liquid bait stations are cost prohibitive); and 3) floral resources that provide food to NE that attack SSP. This project proposes to evaluate the impacts of orchard-wide management of AA with sensors, HGB, and floral resources on biocontrol of ACP and SSP in citrus orchards.	\$416,183.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	32. Landscape Engineering to Manage Beet Leafhoppers Vectoring Beet Curly Top Virus in Tomato and Other Specialty Crops	The project proposes an innovative and sustainable management of beet curly top virus (BCTV), a major disease in specialty crops (including tomato), which is vectored by beet leafhoppers (BLH). This project will demonstrate that barley planted as a trap crop next to tomato fields can significantly decrease the risk of BCTV outbreaks. Barley is an ideal trap crop for BLH because there is strong preliminary data showing that barley is significantly more attractive to BLH than tomato, BCTV cannot replicate in barley, and barley is easy to plant and grow in plots or strips adjacent to tomato fields. Different barley planting strategies (when to plant and fertilization/irrigation) will be experimentally tested to optimize the use of barley as a trap crop. A risk warning decision support tool will be developed based on modeling of immigration by BLH from overwintering sites into tomato fields. Project outcomes will be disseminated via hands-on presentations and contributions to University of California's Integrated Pest Management (UC IPM) website.	\$229,503.00
California Department of Food and Agriculture	\$22,987,649.74	33. Evaluation of RNA Interference-Based Resistance in Almond and Walnut Rootstocks Against Phytophthora Pathogens	Phytophthora root and crown rots cause serious losses to California almond and walnut nurseries and nut producers. This reduces the efficiency of soil and water use which require costly prevention and remediation. Although it will be slow and challenging to develop them using only conventional breeding, almond and walnut rootstocks optimally adapted with resistances to Phytophthora and other key pests are urgently needed. The project's goal is to facilitate rootstock improvement via ribonucleic acid interference (RNAi) based host induced gene silencing (HIGS) for resistance to Phytophthora. HIGS resistance can be stacked with other traits and it has demonstrated its effectiveness against walnut crown gall disease and root-lesion nematodes. The previous project created 80 transgenic walnut lines carrying HIGS constructs for Phytophthora and developed almond embryo lines suitable for HIGS insertion. Success of this project will be measured by the number of Phytophthora-resistant walnut lines and HIGS transformed almond lines it generates.	\$388,377.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	34. Mitigation of Huanglongbing Using Bioinoculants Developed With Strain Level Metagenomics of the Citrus Microbiome	Plant health is a function of the activities of its resident microbiome. This project's objective is to derive beneficial citrus bioinoculants (microbes) from the citrus microbiome as a sustainable management tool for Huanglongbing (HLB). The key for developing successful bioinoculants is to seek candidates in the same niche (host) as the pathogen. A phenomenon in Florida shows that citrus groves with severely symptomatic trees also contain trees that have slower HLB progress, referred to as survivor trees. Microbes have been identified and found to be associated with these survivor trees. The project will infer comparisons between California and Florida citrus microbiomes with strain level specificity using a new metagenomic tool, ProxiMeta Hi-C Metagenome Deconvolution. This will guide development of specific strains as bioinoculants and allow for selection of microbes with a high likelihood of success in the ecological niche of California. These HLB mediators will be tested in the University of California, Riverside's (UCR) Biosafety Level 3 (BSL-3) plant facility.	\$448,406.00
California Department of Food and Agriculture	\$22,987,649.74	35. Enhancing Diagnostics of Regulated Root-Knot Nematodes in Specialty Crops	This project will develop and apply recombinase polymerase amplification (RPA) technology as a novel molecular tool for rapid diagnostics of root-knot nematodes (RKN) <i>Meloidogyne hapla</i> , <i>M. incognita</i> , <i>M. javanica</i> and <i>M. arenaria</i> , which are pests of many specialty crops in California. The RPA technique has some clear advantages over polymerase chain reaction (PCR). It does not require any DNA extraction steps or thermal cycling and the amplification products may be detected at end-point, in real-time between 15-20 minutes, or even in field conditions. Molecular diagnostic protocols dealing with the technique will be available to the state, private nematology laboratories, and farm advisers. The method will represent substantial improvements regarding time and costs over existing diagnostics based on a PCR approach. It does not require any training. The tools developed will enhance significant accuracy and early detection of agricultural important RKN in California.	\$63,761.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	36. Discovering Contributors to the Walnut Replant Problem Using Diverse Rootstock Genotypes Before Commercial Release	California produces most of the walnuts in the United States with an annual farm gate value of approximately \$1.6 billion (2017). When orchards are replaced after 35 to 40 years, the replanted walnut trees often grow unevenly and lack vigor. These impediments can be caused by infestations from root lesion nematodes and poorly understood soil-borne microbes, resulting in the "replant problem" (RP). Methyl bromide was highly effective in mitigating this disorder. After Methyl bromide was banned in 2005, mixes of 1,3-D and chloropicrin (with a use restriction) provided some relief, but at the risk of gassing-off of volatile organic compounds. A selection of Juglans rootstocks planted to non-fumigated and fumigated replant soil at two locations will be used to test novel walnut rootstocks for their tolerance to RP and to decipher microbial components of RP-rootstock interactions. Determining the cause of RP will improve rootstock selection and design of mitigating tools.	\$429,551.00
California Department of Food and Agriculture	\$22,987,649.74	37. Developing Innovative Detection Tools and Cultural Solutions to Minimize Economic Damage of Fusarium Wilt in Tomato	Fusarium wilt caused by <i>Fusarium oxysporum</i> f. sp. <i>lycopersici</i> race 3 (Fol3) is one of the most destructive diseases to the California tomato processing industry. Existing crop rotation practices provide ineffective control because, as revealed in recent studies, many crops cryptically host Fol3 and may allow pathogen persistence. Resistant cultivars have become available but with high soil pathogen loads, the risk of resistance-breaking strain emergence is high. To mitigate disease impacts the project proposes to develop soil testing tools to demystify inoculum loads in soil prior to planting and Fol3-suppressive crop rotations. This proposal will transfer new technologies to private labs, provide diagnostic training, and promote adoption through outreach efforts. Success indicators include the number of companies offering soil testing, the number of first detectors trained, and producers using soil testing and recommendations.	\$169,982.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	38. Detection, Biology, and Management of the Expanding Whitefly-Transmitted Cucurbit Virus Disease Complex in California	The whitefly (<i>Bemisia tabaci</i>) transmitted virus (WTV) and the Cucurbit yellow stunting disorder virus (CYSDV) has impacted production of California melon and watermelon in the Imperial Valley and other desert regions since 2006. It has eliminated fall cucurbit production due to high whitefly and virus pressure. Recently, CYSDV-resistant melon varieties have become commercially available and may allow the return of summer and fall melon production in these regions. However, in 2014, a new WTV, Squash vein yellowing virus (SqVYV), emerged which caused the collapse of watermelon vines. In 2018, Cucurbit chlorotic yellows virus (CCYV) was identified with symptoms identical to those of CYSDV. Resistance to CYSDV is not effective against SqVYV or CCYV. This project will develop a universal detection system to rapidly differentiate all three viruses, add to the knowledge of virus biology, and lead to improved management. Information and tools will facilitate resistance breeding for these new WTVs.	\$192,228.00
California Department of Food and Agriculture	\$22,987,649.74	39. Remote Sensing-Assisted Scouting of Virus Infections in Vineyards	The cost of virus infections per acre in average lifespan vineyards ranges from \$10,000 to \$16,000. With 880,000 acres, California has the most vineyards in the United States (80 percent). As there is no cure for viruses in the field, cost-effective, accurate, early detection and eradication of infected plants is crucial to manage pathogen spread in field conditions and limit the economic impact. Chemical control of insect vectors of viruses has limited efficacy and is often not an option in organic agriculture. Supported by preliminary data, this project seeks to demonstrate that remote sensing coupled with machine-learning can be used to detect major grapevine diseases (red blotch and leafroll) more efficiently than traditional methods. The new tools would be adopted by commercial companies and be made readily available to growers or included into decision-support systems. Transfer of results to growers will increase knowledge and awareness of viruses in commercial fields and assist decisions.	\$279,757.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	40. Identifying the Basis of Lettuce Drop Resistance to Develop Cultivars With Superior Resistance	Lettuce drop is an economically important soil borne disease of lettuce. It is caused by two fungal pathogens, Sclerotinia minor and S. sclerotiorum, resulting in the total collapse of the entire plant before harvest. Fungicides and cultural methods have traditionally been used for lettuce drop control with unsatisfactory results. The incorporation of genetic resistance in lettuce drop management would provide a sustainable approach to the loss of produce. Research funded previously by the California Specialty Crop Block Grant Program (SCBGP) identified resistance not affected by the current breeding program. The mechanism of this resistance is largely unknown. To complement preliminary data from the previous project, this project proposes to evaluate disease symptoms, quantitative phenotyping, and tissue composition to incorporate the findings in breeding. The success of the project will be measured by the number of new diagnostic techniques developed for detecting lettuce drop resistance.	\$430,677.00
California Department of Food and Agriculture	\$22,987,649.74	41. Ground Cover Strips in Pistachio to Control Stink Bugs and Leaffooted Bugs Through Improved Bio-Controls and Monitoring	Though once virtually pest free, pistachios are now attacked by a variety of insect pests, including true bugs, commonly grouped as small and large bugs. Large bugs include stink bugs and leaffooted bugs that can use their large needle-like mouthparts to penetrate the pistachio shell throughout the season. Currently, pesticide applications are the most common control. The project goal is to test novel, irrigated strips of ground covers (shown to reduce weeds in organic farms) and determine if they can be employed to improve large bug monitoring, increase the abundance of natural enemies to large bugs, and/or hold large bugs away from the pistachio canopy to reduce damage. Field samples will be taken during the project to catalog large bug numbers, crop damage, and develop the monitoring and control programs. Measures of success include an accurate description of the pros and cons of the system, a reduction in pesticide sprays, and greater adoption by other stakeholders.	\$289,073.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	42. Characterization of Resistance to Verticillium Dahliae Races 1 and 2 for Improved Iceberg Germplasm Development	Verticillium dahliae is highly destructive to lettuce production and total losses of crisphead-types are high. Genetic resistance is the most economical and environmentally sound control method. Complete resistance to Race 1 isolates of V. dahliae is conferred by the single, dominant gene Vr1, but only partial resistance has been identified for Race 2 isolates of V. dahliae. The Vr1 gene is currently effective in many commercial fields but Race 2 isolates of V. dahliae are being introduced on spinach seed, a common rotation crop with lettuce. Therefore, characterization of resistance to Race 2 isolates of V. dahliae and development of improved lettuce germplasm is imperative. The project objectives are to: 1) combine Vr1 and resistance genes with Race 2 isolates of V. dahliae into a single genotype; 2) identify the most resistant lines from partially-resistant crosses; and 3) develop improved crisphead-type lettuce germplasm. Success will be indicated by releasing new lettuce germplasm, publications, citations, and requests for seeds and information.	\$262,518.00
California Department of Food and Agriculture	\$22,987,649.74	43. Preemptive Development of Management Strategies for Branched Broomrape: An Emerging Threat to California Specialty Crops	Re-emergence of branched broomrape (Phelipanche ramosa), an A-listed quarantine pest, is a threat to the California tomato industry and could threaten several other specialty crops. Yet California is lacking management solutions to cope with this difficult-to-control weed. The goal of this project is to develop preemptive solutions for detection, containment, management, and eradication of P. ramosa before it disrupts the viability of the tomato industry and other specialty crops. As broomrape is hidden underground for most of its life, this project will test hyperspectral remote sensing to discriminate broomrape infected and non-infected plants for rapid detection of infestation foci. To prevent seed dispersal, the project will test machinery sanitation methods and assess a sustainable fumigation practice, biosolarization, to eliminate soil seedbank. The project will recalibrate the Israeli-developed decision support system (DSS), called PICKIT, to equip California growers with the most effective P. ramosa management tool.	\$334,651.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	44. Cooking Matters: Increasing Fruit and Vegetable Consumption Through Cooking Classes and Market Tours	18 Reasons will increase awareness and consumption of California-grown specialty crops through Cooking Matters cooking and nutrition education programs for low-income community residents. Cooking Matters includes one-time market tours as well as six-week, cooking-focused nutrition education series. The project will reach 9,000 Cooking Matters participants over the grant duration. In each class, participants prepare and eat healthy fruit- and vegetable-based recipes. Tours focus on how to purchase, prepare, and store specialty crops. Classes and tours are led by peer educators from the community who have completed a training series with 18 Reasons. Success of the program will be evaluated with matched pre- and post-surveys completed by each graduate that measure changes in fruit and vegetable consumption.	\$300,000.00
California Department of Food and Agriculture	\$22,987,649.74	45. Enhancing Specialty Crops Through Farmer Training and School-Based Education	This project will provide on-the-job farmer training for beginning refugee farmers, and increase access to, education about, and consumption of California specialty crops in Yolo County annually at twelve participating Yolo County schools with Kids Farmers' Markets. The project has three core activities: 1) providing advanced on-the job farmer training to six refugee farmers to produce specific commercial quality specialty crops; 2) providing outreach and education on the health benefits, preparation methods, and how to access specialty crops to underserved children and families; and 3) teaching school aged children about growing and consuming specialty crops via school gardens. The project will track consumption of specialty crops at participating schools.	\$405,846.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	46. Solano County Farm to Institution and Public Education Project	Sustainable Solano is creating an environmentally and economically sustainable, value-driven, community-based local food system to ensure the economic viability of farms and create a stronger market for specialty crops in Solano County. A key part of this vision is increasing awareness, consumption, and sales of specialty crops grown by Solano farmers. The project has four interrelated parts: 1) develop a comprehensive information hub of specialty crops, farmer profiles, and materials to promote Solano-grown specialty crops; 2) build a foundation for in-house hospital kitchens and culinary professionals (restaurants/caterers) to introduce one to two seasonal specialty crops per month; 3) expand the current local food public education program, "What's for Dinner?", to increase knowledge on health benefits, sourcing, and preparation of specialty crops; and 4) showcase local farms and crops through agritourism and Bounty of the County events.	\$238,524.00
California Department of Food and Agriculture	\$22,987,649.74	47. Increasing Specialty Crop Access and Consumption in Low-Income and Low-Access Bay Area Communities	The project will create a healthier food environment to promote increased consumption of California specialty crops in San Francisco Bay Area communities defined as low-income/low-access by the United States Department of Agriculture (USDA). 2015 USDA ERS data showed that twenty percent of census tracts in the cities that Fresh Approach serves are low-income/low-access. Fresh Approach will employ overlapping strategies to increase specialty crop consumption throughout the urban Bay Area. The project will offer low-income residents nutrition and cooking skills that reinforce ways to eat specialty crops on a tight budget; increase the locations that specialty crops can be purchased by adding mobile farmers markets; and increase the number of traditional farmers markets that provide nutrition incentives for low-income customers. This will create new outlets for specialty crop farmers and increase the number of customers who shop for specialty crops. Success will be measured by increased specialty crop sales and consumption.	\$441,960.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	48. Eating Right from the Start - Increasing Consumption of Specialty Crops in Low-Income Communities	NeighborWorks Sacramento will increase specialty crop sales and specialty crop consumption at two Farmers' Markets in Oak Park, a racially diverse community with high rates of poverty and health challenges. This project will reach low-income families that have not traditionally been Farmers' Market customers and encourage them to improve eating habits and health and to become lifetime specialty crop consumers. The "Eating Right from the Start" campaign will include fun, child-friendly, interactive education activities, including the popular "Passport Play" specialty crop nutrition education activities, family tours at local farms, and tours of farmers markets. The project will also add new sales outlets for specialty crop farmers and will link farmers with local grocery stores and restaurants, and provide training, resources, and support to help farmers be prepared and positioned to take advantage of these opportunities.	\$75,431.00
California Department of Food and Agriculture	\$22,987,649.74	49. Developing Sustainable Farm to Institution Market Coordination in San Diego County	Community Health Improvement Partners (CHIP) has cultivated strong relationships with San Diego County growers and institutional buyers. These farm to institution (F2I) relationships were built through CHIP's food service collaborative groups that have catalyzed increased procurement of California-grown specialty crops. In the 2016-2017 school year, San Diego County schools procured \$6 million of California grown specialty crops. However, per the 2018 San Diego Grower Needs Assessment, farmers face major challenges to business viability due to a lack of farm business planning, regulatory, and crop planning support. CHIP will coordinate San Diego specialty crop supply with institutional demand to increase access and consumption, using CHIP's food service groups to specify product demand and local grower sessions to adjust supply. Intertwined with this, experts in farm business planning, regulations, and crop planning will support growers sustaining profitability.	\$342,429.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	50. Expanding Education and Knowledge of Fermented Fruits and Vegetables	Consumer and food processor education is needed on the safe preparation of specialty-crop fermented foods and incorporation of these foods into healthy eating habits. The current lack of educational resources and information is detrimental to specialty crop market growth. This project will provide up-to-date, educational materials and trainings supported by new research on the nutritional and bioactive properties of live-culture, specialty crop fermented fruits and vegetables. Outcomes are print and electronic materials, workshops for consumers, new or improved methods for fermented food processors and their feedback, and new data on those foods. Success of the project will be measured by learning and behavior change among consumers and commercial processors. The project benefits specialty crop growers and processors by increasing consumption, access, and awareness of specialty-crop foods in the context of healthy diets.	\$213,051.00
California Department of Food and Agriculture	\$22,987,649.74	51. Expansion of the Riverside Unified School District Food Distribution Hub	The Riverside Unified School District has leveraged a successful Farm to School program and established relationships with local growers to develop a Food Hub serving small school districts, childcare centers, and restaurants. The Food Hub has sold \$1.5 million of California grown produce to date and is well positioned to expand to new markets. This project will increase the Food Hub's long-term sustainability by expanding its customer base to additional buyers in Riverside and San Bernardino Counties, including additional school districts, charter schools, colleges and universities (seeking to comply with the University of California's twenty percent goal of sustainable produce), childcare centers, and hospitals. The project will also evaluate and disseminate outcomes and lessons learned regarding expansion and replication of this model to other interested parties, including large school districts.	\$432,861.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	52. California Grown Retail Promotions in Japan Featuring California Fresh Cherries and Blueberries	The California Cherry Board (CCB) and the California Blueberry Commission (CBC) propose conducting a series of California Grown retail promotions in Japan featuring fresh California cherries and blueberries. To meet price requirements, Japanese importers have shifted to purchasing lower quality fruit. This has negatively affected the reputation of California fresh fruit, leading to decreased demand and lower export volumes. By organizing large-scale promotions with Japanese retail outlets, CBC and CCB will increase consumer demand, demonstrating to importers the high quality and profitability of California fresh fruit. Leveraging the California Grown identity, CCB and CBC will highlight the availability of California cherries and blueberries as the first fresh imported fruit of the summer. Following the activity, CB/CBC will collect sales data and survey importers on their perceptions of California fruit and interest in increasing purchase volumes in subsequent seasons.	\$395,000.00
California Department of Food and Agriculture	\$22,987,649.74	53. Stanislaus Grown's Farm to School to Community - Nutrition and Specialty Crop Education	The Stanislaus Grown Nutrition and Specialty Crop Education program will enhance marketability and consumption of specialty crops by connecting producers with schools, schools with educational programs, and educational programs with parents and the community to create an integrated farm to school to community system. The program will build upon existing outreach, such as Harvest of the Month, Junior Chef at the Market and the Regional Food and Nutrition Network, by incorporating specialty crop specific curriculum and activities, reinforcing the importance of eating fresh, locally grown fruits and vegetables. The program's integrated approach will include: 1) producer outreach to develop a procurement list for schools; 2) school outreach to develop farm-to-school implementation kits; 3) educational outreach to provide farmer profiles and cooking lessons for students; and 4) community outreach to provide community garden for farmers, schools, students, parents, and educators to work together.	\$200,931.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	54. Technological Innovations to Increase Specialty Crop Consumption Among CalFresh Participants	This project will increase demand for and increase consumption of specialty crops among San Diego County CalFresh participants, by utilizing the County's new text messaging system to provide all CalFresh participants with information about: 1) the benefits of consuming specialty crops; 2) affordable, seasonal, specialty crops (particularly fruits and vegetables; and 3) how to select, store, and prepare specialty crops. The project will reach tens of thousands of San Diego County CalFresh participants. The partnership between the University of California (UC) San Diego Center for Community Health and the UC Division of Agriculture and Natural Resources Nutrition Policy Institute offers a unique opportunity to test and replicate an innovative technology-based model for promoting specialty crops and providing nutrition education statewide and beyond.	\$443,422.00
California Department of Food and Agriculture	\$22,987,649.74	55. Watch Us Grow	The Watch Us Grow project will blend together, with a full "Ground-to-Table" approach, healthy eating and local farming through year-round curriculum lessons, activities, and food tastings for young people from underserved communities. This project will aim to improve access to, and knowledge and consumption of specialty crops from locally sourced farms in Fresno, Madera, Alameda, and Kern counties. The planting of specialty crops will teach children and parents the benefits of consuming specialty crops such as black-eyed peas for addressing obesity, diabetes, and heart disease issues. Participants will plant and grow specialty crops through demonstration events on the African American Farmers of California (AAFC) 20-acre farm and smaller urban farms in Fresno County. Participants will also learn about the nutritional benefits of consuming the specialty crops that they helped grow through outreach events that include demonstrations and recipe development. The program will be provided to school districts, reaching 275 students and 50 adults. Project success will be measured by changes in knowledge of and interest in consuming more specialty crops, as measured by surveys of Watch Us Grow Project participants.	\$100,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	56. Southeast Asian Small Farmers/Businesses Capacity Building Project: Building Networking and Training Opportunities	The Asian Business Institute & Resource Center (ABIRC)'s mission is to assist Southeast Asian (SEA) business owners through access to resources, business and financial plans, marketing assistance, nontraditional loans, workshops conducted in various languages, networking, advocacy for small businesses, certifications for various contractual opportunities, and other means of building capacity within the SEA Asian business community. ABIRC will convene three networking opportunities for SEA small specialty crop farmers with potential buyers, conduct an ethnic media outreach program, and perform community outreach and training activities. ABIRC will work directly with SEA small specialty crop farmers through a case management system to monitor the number of new careers created, jobs maintained or created as a result of project efforts.	\$100,000.00
California Department of Food and Agriculture	\$22,987,649.74	57. Increasing Health Awareness Within the Native American Community of California Specialty Crops Start Date:	The California Indian Manpower Consortium, Inc. (CIMC) was formally created in 1978 under state law as a nonprofit corporation for the purpose of working for the social welfare, and educational and economic advancement of its member tribes, groups, organizations, and Indians and other Native Americans living in its service area. The goal of the project is to increase awareness and consumption of specialty crops within the Californian Native American community through culturally-appropriate events, workshops, and educational materials. By utilizing the Sacramento Native American Health Center (SNAHC) and CIMC's social and health programs and effective statewide communication network (social media and traditional), CIMC anticipates reaching 400 Native American community members during the one-year project. The plan for evaluating and measuring the success of the project will include tracking the number of participants receiving nutritional assistance, sign-in and out sheets, pre- and post-surveys.	\$100,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	58. Health Centers: Partners for Increasing Access to Fruits, Vegetables, and Culinary Education	CommuniCare Health Centers (CCHC) is a Federally Qualified Health Center, a designation conferred by the U.S. Department of Health and Human Services on community-based organizations that provide comprehensive health care services regardless of ability to pay. As part of an ongoing effort to support the holistic health of patients, CCHC conducts wellness initiatives that empower patients to prevent disease and to successfully manage existing conditions. The wellness team coordinates Group Medical Visits (GMVs) that bring together patients who share a chronic disease diagnosis, a medical provider, and health educators to inspire social support, develop knowledge and skills for disease management, and improve patient access to medical care. CCHC will increase the consumption of fruits and vegetables among low income patients by incorporating culinary education into existing GMVs. The culinary education will include culturally-relevant weekly cooking classes offered in conjunction with GMVs at each of three clinic sites and at an outdoor classroom 40 weeks per year, and monthly food demonstrations in clinic waiting rooms to promote cooking class participation while introducing tasty dishes that emphasize fruits and vegetables. Waiting room food demos will be monitored via satisfaction surveys, and cooking class participants will complete assessments at their first and fourth GMV to measure changes in knowledge, attitudes, behaviors, and skills. Electronic Health Record data will provide clinical data.	\$93,776.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	59. Development of New Walnut Drying Methods for Reduced Drying Time and Energy Usage	California produces about 690,000 tons of walnuts each year, contributing \$1.24 billion to the state's economy. However, about three percent of the walnuts are lost due to delayed drying. This is caused by insufficient drying facilities and the low drying efficiency of the conventional hot air-drying method of in-shell walnuts at 43°C. The low drying efficiency results from the resistance of walnut shells to moisture transfer, also leading to high drying costs. Preliminary test results have shown that when the kernels and cracked in-shell walnuts were dried by the same method, they had significantly reduced drying time (47 percent and 21 percent respectively) with corresponding amounts of energy savings, while still meeting the quality requirements of the industrial standard. The aim of this project is to develop and optimize new, efficient walnut drying methods using infrared pre-drying followed by hot air drying of walnut kernels or cracked walnuts. The technology will be disseminated for adoption.	\$429,143.00
California Department of Food and Agriculture	\$22,987,649.74	60. Increasing Profitability of Fig Production in California by Increasing the Shelf Life of Fresh Figs	California ranks first in the nation in fig production. About 87 percent of the figs are processed and sold as dry figs. Selling figs as a fresh market product is desirable and profitable, but distribution is limited for growers because figs are highly perishable and have a short shelf life. Extending shelf life can increase the profitability of fig production. The preliminary studies show that application of ozone on freshly harvested figs can control weight loss and extend shelf life by an additional week. This additional time allows the growers greater flexibility in storage and shipping and could increase the market for fresh figs. This proposed method is environmentally-friendly, chemical-free, and low-cost. The project aims to develop an ozone generator that can be used in the field or in storage and to determine optimal application parameters, such as ozone concentration and application duration. Evaluation of this method will also include recording the shelf life of the sample in the following year.	\$199,567.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	61. Verification and Validation of Environmental Monitoring Programs for Biofilm Control in the Packinghouse	<p>The Center for Produce Safety will partner with Clemson University to develop informational tools for environmental sampling and sanitation frequency in packinghouses. <i>Listeria monocytogenes</i> (Lm), an important foodborne pathogen, has been involved in foodborne outbreaks linked to the consumption of fresh produce and stone fruits. To avoid contamination events, the packing industry must rely on rigorous sanitation practices and environmental sampling plans. The project will grow biofilms formed by background microbiota collected in stone fruit packinghouses and by Lm under conditions simulating industry settings. The main findings regarding biofilm growth rate and transfer will be then validated in pilot plant studies, in which background microbiota will be inoculated and allowed to develop as biofilms on selected surfaces. Growth of the biofilms over time, as well as transfer rates to the produce used in the trials, will be evaluated. Data from biofilm growth and transfer experiments will be used to build a mathematical model of biofilm development, and ultimately designed as a user-friendly Excel add-in. The add-in could be developed into a practical tool to predict microbial behavior in the packinghouse and anticipate optimal sampling time and sanitation intervals, and thus provide the scientific data for sanitation schedules and environmental monitoring programs. Overall, the findings from this project will improve packing operations and the safety of products.</p>	\$190,789.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	62. Environmental Microbial Risks Associated with Vented Produce in Distribution Centers	<p>The Center for Produce Safety will partner with the University of Georgia to assess the contamination risk for fresh produce in vented packaging in distribution center environments. The Food and Drug Administration's (FDA) Preventive Controls for Human Food Rule requires the establishment of environmental monitoring programs within FDA-registered facilities, including in distribution centers that receive, hold, and ship fresh produce. Generally, in the DC environment, product arrives fully packaged and is shipped in the same packaging, with minimal to no handling. However, FDA has determined that fresh produce entering these environments may be at risk for contamination due to the vented nature of the packaging materials used. Produce is typically shipped and stored in packaging that allows the accumulated postharvest gas and moisture to dissipate. The vented packaging also helps maintain product quality throughout the supply chain. This project will examine the risk of contamination in the distribution center environment by surveying distribution center managers and sampling their facilities, with a focus on potentially high-risk areas, practices, or equipment within the distribution centers. Knowledge gained from this project and guidance documents developed will assist distribution centers in evaluating the environmental microbial risks of vented produce as well as eliminating high-risk practices that may contribute to contamination events within distribution center environments.</p>	\$358,218.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	63. Post-Harvest Fresh Produce Wash Water Disinfection by Submerged Cold Plasma Non-Chemical Continuous Treatment System	The Center for Produce Safety will partner with Drexel University to optimize and test a novel energy efficient wash water treatment system for fresh and fresh-cut produce, based on cold plasma technology. Cold plasma technology uses electricity and a carrier gas to inactivate pathogens in water and does not require antimicrobial chemical agents. The challenge with a plasma-based disinfection technology system is to provide sufficient mixing of the plasma-treated water with bulk water in the produce wash system. The goal of this project is to design a plasma-based wash water management system for minimally processed fresh produce to eliminate cross-contamination. The research team will optimize existing reverse vortex gliding arc plasmatron for the specifics of produce processing plants, validate this new system in lab-scale studies, and finalize this project by full validation of the plasma system prototype at an industry-scale testing facility.	\$354,229.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	64. Analysis of the Presence of Cyclospora in Waters of the Mid-Atlantic States and Evaluation of Removal and Inactivation by Filtration	<p>The Center for Produce Safety will partner with the University of Delaware to evaluate a novel filtration method to remove and inactivate the protozoan parasite <i>Cyclospora cayetanensis</i> (<i>C. cayetanensis</i>) from water used for produce. <i>C. cayetanensis</i> presents a unique challenge to the scientific community in understanding its persistence, transfer, and detection in the environment. The first documented domestic <i>C. cayetanensis</i> outbreak, in 2018, was linked to produce grown in the United States. Previous outbreaks had often been associated with produce imported from countries where this organism is endemic. Zero valent iron (ZVI), an affordable by-product of the steel industry, has been shown to be effective in removing and neutralizing bacterial, viral, and chemical contaminants from water. The efficacy of ZVI on parasites has not been studied but shows great potential in filtration applications. This project will determine if <i>C. cayetanensis</i> is present in potential sources of irrigation water within the U.S. Mid- Atlantic Region and assess the effectiveness of ZVI filtration in removing and inactivating protozoan parasites like <i>C. cayetanensis</i> from irrigation water to ensure the safety of produce. Quantitative polymerase chain reaction (qPCR) detection of presumptive-positive <i>Cyclospora</i> in the waters will be correlated with sequencing data and location and climactic data associated with the water sample collection. Filtration parameters for successful removal of protozoa through ZVI filtration will be established; two protozoa surrogates, <i>Cryptosporidium</i> and <i>Eimeria</i>, will be used to address the removal of <i>Cyclospora</i>.</p>	\$58,613.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	65. Sources and Prevalence of Cyclospora Cayetanensis in Southeastern U.S. Water Sources and Growing Environments	<p>The Center for Produce Safety will partner with the Centers for Disease Control and Prevention (CDC) to assess domestic prevalence of Cyclospora cayetanensis in agricultural environments in the southeastern United States. In 2018, a domestic produce-associated cyclosporiasis outbreak and the first Cyclospora detection on domestic produce demonstrated the need for a better understanding of Cyclospora prevalence in U.S. produce-growing environments. The Southeastern Coastal Plain growing region has several risk factors that warrant the evaluation of Cyclospora prevalence, including a farm worker population from Cyclospora-endemic areas, use of surface water for irrigation, and heavy rainfall that could transport Cyclospora into surface waters. This project will assess Cyclospora prevalence in this region through two Georgia industry partners representing growing practices across the southeastern states. Human sewage samples from municipal wastewater influents and on-farm portable toilets will be tested to assess Cyclospora shedding in the region and on-farm, respectively. Cyclospora prevalence in the agricultural environment will be assessed in water and on produce (via a proxy measurement of packinghouse wash water). Using newly developed tools, Cyclospora contamination found will be traced through the produce-growing process by genetic typing to match detections between samples and by assessing the parasite's maturation state to the approximate time since shedding. This project will add to the understanding of Cyclospora contamination in U.S. produce-growing environments and provide information about contamination routes to produce.</p>	\$415,433.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	66. The Prevalence of Cyclospora in Water and Produce	<p>The Center for Produce Safety will partner with the University of Georgia to compare detection methods for <i>Cyclospora cayetanensis</i> (<i>C. cayetanensis</i>) in water and produce and determine the prevalence and persistence of this parasite in selected regions in California and Florida. <i>C. cayetanensis</i> is an important enteric pathogen but its prevalence and persistence in the U.S. environment (water and soil) is unknown. Humans who become infected with <i>C. cayetanensis</i> by consuming contaminated food can develop an intestinal illness known as cyclosporiasis. Cyclosporiasis outbreaks in the U.S. have historically been associated with ingestion of produce imported from cyclosporiasis-endemic regions. In 2018, however, two large cyclosporiasis outbreaks were associated with fresh produce (romaine lettuce and shredded) and vegetable trays (cauliflower, broccoli, and carrots), implicating vegetables produced in the U.S. This project will first examine the specificity and sensitivity of three molecular detection methods for <i>Cyclospora</i> in water and fresh produce to determine the most suitable approach to test for <i>Cyclospora</i> in agricultural settings. The research team will collect samples of river water in California and pond and canal water and fresh produce in Florida over two years, with sampling in seven months each year. The data provided will contribute to understanding the distribution, persistence, and prevalence of <i>Cyclospora</i> oocysts in the environment, which is the first step to address interventions to eliminate and/or prevent introduction of the parasite in produce at the farm level.</p>	\$245,118.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	67. Building Bay Area Cooperation for Urban Specialty Crop Production, Market Access, and Nutrition Equity	This project will be conducted as a collaborative partnership, led by Acta Non Verba: Youth Urban Farm Project (ANV) and in collaboration with the Multicultural Exchange for Sustainable Agriculture (MESA) and Mandela Grocery Cooperative to increase access to and the consumption of specialty crops grown in socially disadvantaged communities and support beginning urban specialty crop growers. ANV will facilitate trainings to youth and adults and develop new market outlets for specialty grown crops. MESA will add momentum to increase production capacity and resources for beginning specialty crop growers and Mandela will expand trainings as well as increased sales of specialty grown crops. The target communities include West and East Oakland, Berkeley and El Sobrante. A collaborative monitoring and evaluation process will: 1) include initial needs assessments to develop the baselines for consumer and participant; 2) evaluate the production, supply, and access of specialty crops; 3) evaluate the number of individuals (youth and adults) reached; and 4) evaluate the quality of reach with identified core competencies for the learning programs.	\$100,000.00
California Department of Food and Agriculture	\$22,987,649.74	68. Promoting Specialty Crops by Training Retailers, Mobile Vendors, and Educating Community Members.	The Center at Sierra Health Foundation is an independent 501(C)(3) nonprofit. The Center brings people, ideas and infrastructure together to create a collective impact that works to eradicate health inequities across the state of California and especially within the San Joaquin Valley. The Center at Sierra Health Foundation will serve as the fiscal agent for Cultiva La Salud, which is a public health advocacy organization based in Fresno, CA. Its mission is to engage, inform, and inspire residents of the San Joaquin Valley to become actively involved in promoting their health, the health of their families and the broader community through policy, system and environmental improvements that promote healthy eating and active living. The project will increase access to produce grown by local socially disadvantaged specialty crop farmers by making the produce available in underserved neighborhoods. The project will also provide education on specialty crops to disadvantaged community residents. These two goals will be accomplished by training mobile food vendors who will sell locally grown specialty crops and provide needed community education.	\$100,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	\$22,987,649.74	69. Growing a Vibrant East San José from its AgriCultural Roots	The mission of Veggielution is to connect people from diverse backgrounds through food and farming to build community in East San José, California. Programs expand opportunities for East San José residents to rebuild their local food system. Each year, Veggielution grows over 30,000 pounds of produce using pesticide-free and sustainable growing practices. All of the produce grown is distributed to local residents through channels that include a farm stand, cooking classes, middle school field trips, and Veggie Vouchers (veggie “prescriptions” issued by local pediatricians). Through this project, Veggielution will increase consumption and raise awareness of the nutritional benefits of ethnic specialty crops among San José residents through various programs and marketing channels. Project success will be evaluated and measured through surveys, focus groups, and one-on-one conversations with adults and youth about the knowledge they have gained about specialty crops, their intention to eat them, and their reported consumption of these foods. Project success will also be measured by the number of additional ethnic crops added to the crop plan during the two-year grant period.	\$98,927.00
California Department of Food and Agriculture	\$22,987,649.74	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$2,075,542.25
Colorado Department of Agriculture	\$839,118.38	1. Colorado Pavilion at the 2020 PMA Fresh Summit	The Colorado Department of Agriculture (CDA) will lead the project to exhibit at the Produce Marketing Association’s (PMA) Fresh Summit Expo on October 15-17, 2020 in Dallas, TX. CDA will partner with Colorado produce associations, growers and handlers. The PMA Fresh Summit is the largest produce marketing expo in the U.S. Because of the cost of attending, and the fact that booth location is selected by seniority, it is most beneficial for Colorado businesses to attend under the umbrella of the CDA. CDA will assist up to nine Colorado companies and associations in gaining a national and international buying audience through attendance at Fresh Summit Expo. The project focuses on increased sales and customer base for Colorado specialty crop companies.	\$76,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Colorado Department of Agriculture	\$839,118.38	2. The Benefits of Sod in an Urban Landscape	The Rocky Mountain Sod Growers (RMSG) will lead this project to educate the public concerning the benefits of sod in the environment through an advertising campaign designed to highlight environmental benefits, inform the public about the actual water needs of turf, discuss the role of turf in an urban environment, and show how grass in the landscape increases property values. In addition, the RMSG will run a digital campaign, update the official website, and invest more in geo-targeting. A possible drought in 2020 will be utilized to educate growers about how to effectively conserve water throughout the state of Colorado.	\$30,000.00
Colorado Department of Agriculture	\$839,118.38	3. Stimulating Consumer and Wholesale Purchases of Colorado Produce Through Targeted Promotional activities	The Colorado Fruit and Vegetable Growers Association (CFVGA) will lead this project to promote Colorado produce through activities that reach both consumers and commercial buyers. , Building upon the successes of prior project activities, this project aims to increase sales of Colorado produce by 2 percent through out-of-state produce expos, grower and buyer tours/meetings and general networking sessions, and targeted social media campaigns. CFVGA will also share results with stakeholders through email, conferences, radio interviews and organizational annual reports.	\$27,000.00
Colorado Department of Agriculture	\$839,118.38	4. Advancing Produce Grower Education and Networks Through Business Management Focused conferences	The Colorado Fruit and Vegetable Growers Association (CFVGA) will led this project to assist Colorado growers gain knowledge about business management tools and resources through annual conferences in 2020 and 2021 and a labor conference in 2020 then share results with stakeholders through email, conferences, radio interviews and organizational annual reports. Building on the successes funded from prior SCBGP awards for annual conferences, CFVGA will utilize the new funding to support speaker costs and room rental for these two CFVGA annual conferences to provide business management continuing education and networking for growers.	\$14,200.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Colorado Department of Agriculture	\$839,118.38	5. Strengthening Existing Food Safety Programs by building a Traceability Curriculum and Grower Training	The Colorado Fruit and Vegetable Growers Association (CFVGA) will lead this project to assist Colorado growers enhance their produce safety programs by developing a food safety traceability curriculum. The program will be delivered at one or more grower-workshops and then curriculum and workshop outcomes will be shared with stakeholders through email, conferences, radio interviews and organizational annual reports. This workshop will build on knowledge and skills CFVGA started addressing in its 2017 "Recall Readiness and Crisis Communications Workshop." The outcomes from this project will position Colorado growers to better meet evolving food safety and marketplace requirements.	\$7,442.00
Colorado Department of Agriculture	\$839,118.38	6. Research to Establish Cider Apple Industry in Colorado	The Colorado Cider Guild (CCG) will lead this project to create a body of knowledge for Colorado's apple growers to supply cider apples to the fast-growing Colorado hard cider market. CCG will use the fund to allow the grantees to establish what the market is, where the apples are coming from now and in the future, and what growers can do to meet the increasing demand from Colorado cider producers, both from a horticultural standpoint and on an economic basis. CCG will also develop an innovation model to provide prospective cider apple growers with best management practices, varietal recommendations, and ROI information. CCG will also host three workshops around the state to educate farmers on what is learned and how to start cider orchards.	\$58,000.00
Colorado Department of Agriculture	\$839,118.38	7. Cooperative Distribution and Market Access for Remote Specialty Crop Producers in Southern Colorado	The San Luis Valley Local Foods Coalition (LFC) will lead this project to develop market access for and consumption of the abundant supply of Southern Colorado's specialty crops. The focal specialty crops within this proposal are those grown in abundance with reliable supply in the San Luis Valley and Arkansas Valley, many of which lend to minimal processing, canning, and freezing. The project aims to increase gross sales by 12 percent through facilitating increased institutional procurement by engaging institutional buyers, undergoing production planning, developing distribution efficiencies, and expansion of the Harmonized GAP Plus+ certification.	\$22,500.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Colorado Department of Agriculture	\$839,118.38	8. Effect of Crop Rotations on Soil-Borne Pathogen Population Dynamics	The Colorado Potato Administrative Committee will lead a collective effort in this project with partners such as California State University researchers from Fort Collins and the San Luis Valley Research Center, as well as potato grower cooperators in the San Luis Valley (SLV) to determine the effect of two and three-year crop rotations on changes in soil-borne potato pathogen levels. This project aims to identify crop rotation schemes that would allow sustainable production of potatoes in the SLV. Build on the previous research, this project will focus on gaining understanding of shifts in causal agents of specific soil-borne pathogens (causing diseases such as silver scurf, black dot, black scurf, black leg, common scab, powdery scab etc.) of importance to SLV potato growers.	\$33,148.00
Colorado Department of Agriculture	\$839,118.38	9. Increasing Production and Education of Specialty Crops at High Altitude	Guidestone Colorado will lead this project aiming to increase production of specialty crops at high altitude by strengthening the capacity of season extension models. Guidestone Colorado will work with the school district to incorporate more produce into their year-round meal planning and to increase infrastructure and year-round production on site. The project aims to increase access and awareness to Specialty Crops by providing more produce to local wholesale markets, and fostering the development of knowledge, skills, and awareness of how to grow food in a high-altitude environment through education programming for youth and adults.	\$18,000.00
Colorado Department of Agriculture	\$839,118.38	10. Management Strategies to Maximize Colorado Peach Orchards Productivity and Fruit Quality Potential	Colorado State University (CSU) will lead this project to develop sustainable orchard management strategies that improve the economic aspects of tree fruit production in western Colorado. The general aim of this project is to provide Colorado peach growers with knowledge and technology to produce more value-added fruit with less inputs and provide consumers fruit of consistent and excellent quality. New peach cropping systems that are resilient for the Colorado growing conditions (high soil pH, cold damage, Cytospora canker, replant disease) and improve productivity and fruit quality will be evaluated. The project aims to enhance the competitiveness of the peach industry in Colorado by increasing productivity and profitability.	\$53,897.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Colorado Department of Agriculture	\$839,118.38	11. Cytospora Canker Threshold Computer Decision Aid for Colorado Peach Growers	The Cytospora Working Group will lead this project to develop best management strategies for canker pathogens in stone fruit orchards, including: 1) live with the disease, 2) chemical controls, and 3) sustainable sanitation. Cytospora canker (CC) is a potentially devastating fungal disease in western Colorado. Palisade peach production is culturally and economically important in this region. Without a viable solution, sustainability of the industry and region are at high risk. The goal is to develop a model that accounts for the economic impact of CC with each type of best management strategy, and then to develop a computer “app” to inform growers of economic thresholds for management options.	\$98,373.00
Colorado Department of Agriculture	\$839,118.38	12. Regaining Control of Colding Moth in Organic Apple Production Identifying Integrated Pest Management Failures and Potential Solutions	Colorado State University will lead this project in partnership with the Colorado Department of Agriculture and local organic apples growers, to conduct the following tasks: 1) identify the reasons for a significant increase in damage caused by Codling moth (Cydia pomonella) in organic orchards that have historically controlled the pest successfully using integrated pest management (IPM), and to 2) identify methods to regain successful management of this pest. Codling moth (CM) is one of the most serious insect pests in organic apple and pear production. The purpose of this project is to identify failing IPM practices to control codling moth and to correct these practices, allowing organic apple growers to again operate profitably. This will require exploratory research, proofing, and education.	\$37,647.00
Colorado Department of Agriculture	\$839,118.38	13. Evaluation of Lactobionate to Enhance Pepper Production Through Improved Soil Health	Colorado State University (CSU) will evaluate the effect of lactobionate amendments for improved soil health and water retention on Colorado pepper production. One of the challenges to the sustainability of specialty crop production is maintaining crop production as climate change drives more frequent and severe droughts. This project aims to provide new, targeted technologies that are easy-to-use and compatible with current grower practices are needed to provide producers with new tools to address water retention and soil health. This project will also test the effects of lactobionate on pepper yield and quality as well as soil moisture and soil health to determine the impact of lactobionate on soil health and pepper yields.	\$59,075.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Colorado Department of Agriculture	\$839,118.38	14. Identifying Integrated Pest Management (IPM) Methodologies for The Control of Cornseed Maggot (<i>Delia Platura</i>) in Organic Colorado Sweet Corn	Colorado State University will lead the project to identify Integrated Pest Management (IPM) methodologies for the control of cornseed maggot (CSM) in organic sweet corn production in Colorado, in partnership with the Colorado Department of Agriculture and local organic sweet corn growers. The purpose of this project is to identify sustainable IPM methodologies to manage CSM organically that will allow growers to successfully grow organic sweet corn profitably. Identifying and implementing these methodologies will allow Colorado sweet corn growers to diversify and expand their market options and increase their profitability.	\$36,847.00
Colorado Department of Agriculture	\$839,118.38	15. Colorado Native Plant Finishing Protocols for the Horticultural Industry	Plant Select® will lead this project to survey growers in Colorado and collect the information of what species of Colorado native plants that growers are able to successfully produce and sell. Based on the results of the initial survey, this project will generate a list of species to be selected to collect finishing protocols. Upon receiving the protocols from growers, Plant Select® and Colorado State University (CSU) will evaluate the protocols and look for commonalities to draft a ‘master’ protocol to test in the greenhouse. CSU will be charge of planting and collect data on a replicated study that tests the effectiveness of the protocols. The objective of this project is to improve the finishing protocols to increase marketability of Colorado native plants.	\$37,858.00
Colorado Department of Agriculture	\$839,118.38	16. Defining Rocky Ford Melon Quality Characteristics and Screening Cultivars That Meet the Criteria	Arkansas Valley Research Center will lead this project to research characteristics of Rocky Ford melons and identify varieties with longer shelf life suitable for the Rocky Ford growing area. Overall, both genetics and growing environment play significant roles in determining a melon’s physical attributes, composition, and flavor. The purpose of this project, therefore, is to characterize the physical and chemical nature of existing varieties of Rocky Ford melons as well as new LSL types. In addition, the project will determine how variety, state of maturity, and post-harvest handling influence melon shelf life, sensory attributes, and ultimate marketability.	\$56,748.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Colorado Department of Agriculture	\$839,118.38	17. Specialty Crop Production Research, Technical Support, and Coordination for Colorado Growers: 2020	The Colorado State University (CSU) will lead this project to oversee and conduct researches combined with technical support and outreach to provide Colorado specialty crop producers with science-based information to stimulate innovation, competitiveness, and success. The objectives for this project are: 1) determine the most suitable specialty crop cultivars for Colorado via vegetable crop cultivar trials; 2) evaluate crop production technologies and new inputs for Colorado specialty crop production; 3) develop an innovative strategy that can be adopted by Colorado specialty crop producers; and 4) disseminate information to Colorado specialty crop growers and extension personnel.	\$77,762.00
Colorado Department of Agriculture	\$839,118.38	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$94,421.68
Commonwealth of the Northern Mariana Islands Department of Lands and Natural Resources	\$243,470.95	Student Farmers	The Division of Agriculture will work with various schools within the CNMI Public School System to help students learn how to plant specialty crops beginning with a range of topics from preparing the soil, to germinating, planting, harvesting and selling the produce at the market. Students will be introduced to the farming of specialty crops as far as how and when to plant, providing the plants with water, applying fertilizer and insecticide, harvesting, and marketing them.	\$243,470.95
Connecticut Department of Agriculture	\$424,082.57	1. Drone Imagery for Early Detection of Fruit Crop Nutrition Deficiencies	The University of Connecticut will identify and quantify nutrient deficiencies in perennial fruit crops using drone imagery and interpretation in order to positively impact the present season's crop of the participating growers. The project results will be disseminated to stakeholders through grower meetings, newsletters, a story map, posters and factsheets.	\$79,424.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Connecticut Department of Agriculture	\$424,082.57	2. Regionalization of a CT Grown Specialty Crop-Based Food System	The Brass City Regional Food Hub – Connecticut’s first, purpose-built fresh food aggregation, processing, and distribution facility - will catalyze a paradigm shift of traditional specialty crop distribution, market share, and sales by regionalizing key aspects of the specialty crop industry across relevant agricultural sectors. The main objective of this project is to utilize the Brass City Regional Food Hub as an instrument of regionalization for key areas of the Connecticut specialty crop industry by increasing its competitiveness, market share, and consumption across all relevant agricultural sectors through utilization of quality assurance, food safety, marketing, and logistical distribution/transportation strategies.	\$99,700.00
Connecticut Department of Agriculture	\$424,082.57	3. Optimizing Irrigation Water Use in Greenhouses and Nurseries	The University of Connecticut aims to reduce the environmental footprint of greenhouse and nursery-grown crops by increasing the efficiency of water and fertilizer use. The project will collect water quantity and quality data in commercial operations and use it to develop nutrient programs that are specific to the needs of Connecticut greenhouses and nurseries. We will promote the implementation of improved water and fertilization practices in greenhouses and nurseries by disseminating the results to stakeholders through direct and indirect communication channels.	\$99,478.00
Connecticut Department of Agriculture	\$424,082.57	4. Survey for Grapevine Leafroll-Associated Viruses in Connecticut	The Connecticut Agricultural Experiment Station (CAES) scientists will conduct a statewide survey of the viruses that cause grapevine leafroll disease (GLD) to develop efficient management strategies to control this devastating disease in Connecticut (CT) vineyards. In this research proposal, we join experts in plant virology, entomology, and epidemiology in a collaborative effort to identify the extent of the viruses spread and the insect vectors (hemipterans) capable of spreading these viruses in CT. With this information, we will then be able to raise awareness among grape growers, vineyard managers, and vintners on the detrimental effect of this devastating virus disease in grape production and quality. CAES will partner with CT Department of Agriculture in knowledge dissemination and outreach. The long-term goal is to develop a statewide management plan that is	\$94,938.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			mechanistically and economically feasible, which might then be adopted by all growers throughout the northeastern region of the United States.	
Connecticut Department of Agriculture	\$424,082.57	5. Increasing Consumption of Connecticut Specialty Crops in WIC Participants and Seniors through the Farmers' Market Nutrition Program	CT Dept. of Agriculture, in partnership with 211 Counts, the Connecticut Department of Public Health (DPH), and select local Women, Infant, and Children (WIC) agencies and elderly municipal agencies and organizations, will work to increase consumption of specialty crops in nutritionally at risk individuals, WIC participants and seniors over the age of 60, by increasing redemption of the Farmers' Market Nutrition Program and Senior Farmers' Market Nutrition Program checks. This shall be done by identifying underserved municipalities and conducting targeted outreach efforts to program participants where nutrition education and local food access information has shown to be insufficient.	\$14,574.00
Connecticut Department of Agriculture	\$424,082.57	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$35,939.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Delaware Department of Agriculture	\$359,060.91	1. Small Fruit Extension Programming and Establishment of Small Fruit Demonstration Plot	Members of the University of Delaware Agriculture Extension Team will work to enhance Extension programming and resources for small fruit growers and beginning farmers. They will establish a small fruit demonstration plot at the University of Delaware’s research farm located in Georgetown. During the project, the demonstration plot will be used for workshops on small fruit establishment and management, including recommended commercial practices for planting, weed management, fertilization, irrigation and trellising. In each year of the project workshops will be held at the Georgetown demonstration plot and at existing facilities in New Castle County. As the demonstration plot is established, photographs and videos that are taken will be used to develop digital and print Extension publications to help growers be successful in establishing and producing small fruit crops.	\$15,474.00
Delaware Department of Agriculture	\$359,060.91	2. Biological Control of Two Spotted Spider Mites in Cucurbits	This University of Delaware research project will conduct research on biological control of Two Spotted Spider mites, focusing on watermelon and muskmelon fields. Spider mites are among the most economically important arthropod pests of watermelon, and can be significant pests in other vegetable crops, including tomatoes and eggplant. Predatory mites will be evaluated for their ability to control two spotted spider mites and their potential integration with other insecticide programs that may be used in watermelon. In addition, spider mite distribution in commercial watermelon fields will be assessed. Melon fields will be scouted intensively for mites following a grid sample method. Consistent mite invasion patterns may aid targeted predatory mite releases. It is anticipated that this work will help build a biological control program for mites, potentially reducing the need for miticide input, decreasing resistance selection pressure, and reducing exposure to non-target organisms. Project results and progress will be summarized and distributed to stakeholders.	\$33,918.89

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Delaware Department of Agriculture	\$359,060.91	3. Characterization and Deployment of Newly Identified Genes for Durable Resistance to Downy Mildew in Lima Beans	The project team at The University of Delaware seek to further characterize and develop recently identified lima bean accessions that contain new sources of resistance to the most important plant pathogen of this crop in the mid-Atlantic region, <i>Phytophthora phaseoli</i> , the causal agent of downy mildew. Many commercially available lima bean cultivars with other desirable traits do not contain resistance to this pathogen. This project will characterize these novel sources of downy mildew resistance, as well as identify markers to facilitate the incorporation of this trait into important breeding lines. Further, our project goal includes identification of additional mechanisms of resistance against this pathogen; we have a near-complete reference genome for lima bean, and completion of this resource will provide numerous candidates for downy mildew resistance. The reference genome will also facilitate development of markers, which will then be used to rapidly identify major resistance genes in germplasm.	\$49,091.00
Delaware Department of Agriculture	\$359,060.91	4. Miticide Resistance Monitoring for Spider Mites in Delaware Specialty Crops	This University of Delaware research project will conduct research on miticide susceptibility and resistance monitoring of the two spotted spider mites (<i>Tetranychus urticae</i> Koch, Acari: Tetranychidae) in Delaware vegetables. Spider mites are key pests of watermelon and can be important pests of solanaceous crops and high tunnel production systems. The research funded by this project will examine miticide susceptibility in Delaware specialty crops, focusing on but not exclusive to watermelon. Stakeholders will be advised what pesticides, if any, are at risk for reduced efficacy. Comparing bioassay findings with pesticide use records will enable conclusions to be generalized for farmers whose pest populations were not sampled. Project results will be disseminated at extension meetings, including Delaware AgWeek fresh market fruit and vegetable sessions. Results will be posted on UD extension's web page, and incorporated into Weekly Crop Update, a weekly electronic agricultural extension update for stakeholders.	\$15,382.87

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Delaware Department of Agriculture	\$359,060.91	5. Digitally Marketing Delaware's Specialty Crops	Delaware Farm Bureau (DFB) will run a digital advertising campaign over two years via social media, digital audio, web banners, and location-based targeting displays starting April 1, 2020 until December 5, 2021 to introduce 24 fresh market crops available seasonally at Delaware markets. The purpose of this project is to digitally market specialty crops to consumers. According to a 2018 study by Nielsen, consumers spend almost 11 hours per day on their phones and computers interacting with media, including watch, reading and listening to media. The goals for this project are to reach consumers on digital platforms such as Facebook and the web to educate about 24 different specialty crops, 12 per year, over two years, to increase awareness of the 24 specialty crops during their specific seasons; and potentially increase sales of specialty crops in Delaware.	\$39,000.00
Delaware Department of Agriculture	\$359,060.91	6. Expanding Specialty Crop Garden Program to Schools in Kent and Sussex Counties	Healthy Foods for Healthy Kids (HFHK) specializes in designing and implementing school vegetable garden programs for Kindergarten-8th grade students. HFHK programs run during the academic year and allow every student to participate in hands-on learning activities. By coordinating garden building, providing teacher training and lessons, and using fast-growing, cool-weather crops, HFHK makes it practical for public schools to engage in “seed-to-table” growing every spring and fall. Radishes, beets, kale, arugula, and various leaf lettuce plants from the garden are either served to students in school cafeterias or as part of classroom cooking demonstrations. The organization currently serves 12,000 students in 33 Delaware schools (28 public, 2 charter, 3 private), most of which are K-5 schools in New Castle County. HFHK proposes through this grant to expand service to include two schools in Kent County and two schools in Sussex County during the two-year grant cycle.	\$49,782.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Delaware Department of Agriculture	\$359,060.91	7. Sustainable Energy Improvements to Support a Hydroponic Vegetable Production Facility and Improve Economic Viability of Vacant Poultry Houses	Hope Floats Farm, LLC(HFF) is committed to retrofitting an out of production 40' x 500' poultry house into a hydroponic production facility growing specialty crops, herbs and vegetables, at Mil-Chick Farm, located in Bridgeville, DE. The goal is to produce year-round herbs and vegetables for the local markets in Delaware and Maryland. The conversion of vacant poultry houses into hydroponic production facilities is a newer endeavor that has been launched by Envista Farms, LLC through a collaboration with the University of Delaware (UD), DE Dept. of Agriculture (DDA), the SMART Congressional Initiative (SMART) and Delaware Electric Cooperative. In DE, there are approximately 1,200 vacant poultry houses that present approximately 30,000,000 square feet of vacant space. Our goal is to determine that there are effective ways to create a more sustainable, year-round and energy efficient production method with true economic and environmental benefits when a poultry house is retrofitted into a hydroponic production facility. We will cooperate with Envista Farms and will share our scientific results with interested growers, extension specialists and other interested agriculture specialists.	\$50,000.00
Delaware Department of Agriculture	\$359,060.91	8. Educational and Community Garden at the Corteva Agriscience Farm at the Food Bank of Delaware	The Food Bank of Delaware (FBD) will create an educational and community garden to educate those that visit our campus and farm, particularly low-income populations and children, about different techniques on how to grow fruits and vegetables and the benefits of eating more of them. By creating an educational and community garden space at the FBD facility it creates an opportunity to reach individuals with important education about the need to eat more fresh fruits and vegetables for a healthy diet, while educating them about how they can create similar gardens at their home or within their community to grow their own produce.	\$26,524.17
Delaware Department of Agriculture	\$359,060.91	9. Introducing Goji Berry (Lycium barnarum) Production Methods to Delaware	1st State Hemp will develop successful propagation and cultivation methods for growing goji berries to enhance the competitiveness of specialty crops produced in Delaware. Goji Berries are a highly-nutritious perennial berry that belongs to the nightshade family. The large-scale production of this berry has not yet been attempted in the state of Delaware (to our knowledge) but has produced very well in-home gardens. The need for farms to diversify	\$33,600.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			<p>some of their acreage brings opportunities for new crops for the area. Because this fruit is yet to be tested on an agricultural level in the state, this project will show the best propagation and cultivation methods for the crop in hopes of expanding production. This will be done through conveying the information we gather through extension agencies, online/paper documents, and at Delaware agricultural events.</p>	
Delaware Department of Agriculture	\$359,060.91	10. The Conversion of an out of Production Poultry House into a Hydroponic Growing Facility	<p>Rodney L. Messick Farm, Inc is a family farm located in Milford, DE. The family is proposing to retrofit an out of production 40' x 500' poultry house into a hydroponic production facility growing specialty crop herbs and vegetables. The goal is to produce year-round herbs and vegetables for the local markets in Delaware and Maryland. The farm family desires to partner with Extension and State Agency Specialists to determine if this hydroponic production facility is sustainable and productive. The retail demand for locally grown year-round herbs and vegetables has increased in the suburban and urban centers located in and around Delaware. The conversion of an out of production poultry house into a hydroponic facility will provide farmers a new alternative use of crop production. Thereby: 1. providing year-round local crops, 2. decreasing the cost of transportation of produce to the market place, 3. improving the environmental stewardship of raising high value herbs and vegetables by decreasing fuel, electric, and pesticide and water usage for crop production as compared to field grown crops, and 4. increasing farm revenue.</p>	\$46,243.02
University of the District of Columbia	\$241,627.00	1. Develop and Run a 3-Season Workshop Series for Beginning and Socially Disadvantaged Farmers	<p>Through development and implementation of a 3-season urban agriculture workshop series, DC Urban Greens will increase knowledge and awareness of urban specialty crop production and access in District of Columbia food desert neighborhoods and build a skillful, knowledgeable workforce of beginning and socially disadvantaged farmers.</p>	\$44,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
University of the District of Columbia	\$241,627.00	2. Out Teach School Garden Enhancement and Specialty Crop Integration in Washington, DC	<p>Out Teach (formerly REAL School Gardens) will partner with two Title I elementary schools in Washington, DC—Ketcham Elementary School in Ward 8 and Whittier Education Campus in Ward 4—to enhance their school gardens with specialty crops, while providing two years of training to help teachers effectively use specialty crops as a multi-disciplinary educational resource. During the grant period, the following outcomes will be achieved: 1) make enhancements to existing school gardens for use as instructional tools integrated into the culture of each school; 2) prepare and equip teachers with the knowledge and tools to provide valuable outdoor learning opportunities for students; 3) introduce and teach under-resourced communities about seasonal specialty crops and their importance to our ecosystem and local food systems; and 4) increase consumption and use of specialty crops by connecting schools to essential academic lesson plans aligned with Common Core and Next Generation Science Standards, while promoting the DC Healthy Schools Act of 2010. Over two academic years, Out Teach will assist each partner school in planting new specialty crops in their school gardens and provide teachers at each school with hands-on, one-on-one instructional coaching sessions to learn more about the specialty crops and how they can be used for instruction. At the end of the program, 90 percent of the teachers trained will actively utilize specialty crops to help students apply academic concepts which are critical to success in the upper grades and beyond, while instilling healthy eating habits and fostering environmental stewardship.</p>	\$36,977.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
University of the District of Columbia	\$241,627.00	3. FoodPrints: Growing Young Gardeners and Nutritious Eaters and Increasing Food Access in Ward 7	FRESHFARM FoodPrints provides partner DC public schools with urban school gardens, teaching kitchens, hands-on curriculum, and parent education that increase production of, access to, and consumption of in-season vegetables and fruits for students and their families. This project will serve one of the highest needs areas of DC through a full-scale garden, food and environmental education program with family engagement, school meals, and farmshare components to increase knowledge of and access to specialty crops in the Kimball school community in Ward 7. The outcomes of this project are to enhance the competitiveness of specialty crops through increased consumption and increased access as measured by: 1) variety and amounts of crops grown in, harvested and consumed from the school garden; 2) knowledge of and preference for produce similar to what is grown in the school garden and prepared in in-school food education classes; 3) participation by school community members in a flexible, subsidized farm share and 4) increased student access to fresh produce in meals served in the school lunch program.	\$49,900.63
University of the District of Columbia	\$241,627.00	4. Washington Youth Garden's Specialty Crop Program	Washington Youth Garden (WYG) is the flagship program of Friends of the National Arboretum and the longest running garden-based education program in Washington, DC. WYG grows and donates over 150 specialty crops produced at our one-acre fruit and vegetable Youth Garden on the grounds of the US National Arboretum and at five additional gardens at Title 1 schools. Child-oriented fruit and vegetable gardens on the grounds of arboreta and botanical gardens are not uncommon. However, WYG has a uniquely rich history and heritage in its close, personal connection to the neighboring community. First established in 1971 as a community garden plot for nearby youth to grow food after school and on weekends, WYG programs now reach thousands - through field trips, drop-in activities, school garden development partnerships, and high school internships - nurturing curious minds and healthy bodies by connecting youth to food, the land, and each other. Through this project, WYG seeks support to improve efficiency and to establish innovative long-term programming to increase general positive exposure to specialty crops, and, more importantly, significantly increase consumption of specialty crops for some of the most vulnerable youth.	\$49,618.76

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
University of the District of Columbia	\$241,627.00	5. H2H's Sankofa: Nourishing Ourselves to Grow	This project will grow H2H's local community-led food system programming. The purpose is to build a network of productive organic farmers, food entrepreneurs and healthy consumers united in purpose, to combat food insecurity and eradicate socioeconomic disparities. The vision is to engage reentry residents, seniors and marginalized immigrants to adopt urban agriculture by embracing urban farming as a culturally responsive, wellness-driven, inclusive undertaking to produce, distribute, market, prepare/consume, and recover our ecology and lifelong happiness. The objectives of this project proposal are fully designed to benefit target communities and the H2H team to: 1) provide eco-green career paths and startup garden renovation support for H2H's staff and trainees; 2) garner essential vendor licenses and permits to establish H2H's first farmers market in hyper local communities of returning citizens, seniors and immigrants in in Ward 1 and 7; and 3) support with applied research and educational programing the implementation of H2H's hyper-local, equitable and community-led food value chain enterprising system.	\$43,232.31
University of the District of Columbia	\$241,627.00	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$17,898.30

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	1. Reforming the H-2A Guest Worker Program and the Economic Impact	The University of Florida researchers will study the economic impact of reforming the H-2A guest worker program and recommend labor strategies to Florida strawberry and tomato growers in response to reforms. Labor shortages, decreasing domestic migrant labor pool, increasing labor costs, and widespread use of illegal labor force are posing tremendous challenges to the labor-intensive specialty crop industries. Without a secure and affordable labor supply, the sustainability and survival of the industry is at risk, and the market shares of Florida strawberries and tomatoes are expected to continue declining. However, the current H-2A program has long been criticized for its high wage rates, high overhead costs, and long bureaucratic procedures involved, which increase growers' cost burden and the risk of delayed or missed harvest. There have been various proposals and discussions on H-2A program reforms. This project will examine major rules or restrictions of the H-2A program and evaluate the economic impact of reforming these rules, quantifying the costs and benefits of various reform scenarios. Regulators and industry leaders could use the information generated from this research to pursue program reforms. The research will further help growers identify optimal labor strategies that maximize profits under the reformed guest worker program.	\$113,790.00
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	2. Improving Delivery and Control with Postemergence Herbicides for Problematic Weeds in Vegetable Row-middles	The University of Florida will identify additional herbicide modes of action and develop a precision applicator to deliver cost effective control of herbicide resistant American black nightshade and ragweed parthenium for strawberry and vegetable row-middles through development of a precision sprayer prototype and research-based scientific experimentation.	\$109,535.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	3. Molecular Breeding for Charcoal Rot Resistance in Florida Strawberries	Strawberry varieties released from UF/IFAS strawberry breeding program are grown approximately 95 percent of Florida's commercial strawberry fields. Our program efforts will continue to enhance earliness, sweetness and flavor, as well as resistance to multiple diseases. Charcoal rot of strawberry caused by <i>Macrophomina Phaseolina</i> is an emerging threat to Florida strawberry industry. This disease has spread rapidly in Florida's strawberry industry in the last three years. There are no other effective chemical controls to reduce yield losses. Throughout this project, the UF strawberry breeding program at the University of Florida's Gulf Coast Research and Education Center will increase resistance to charcoal rot disease and improve fruit quality in new strawberry varieties by developing and applying new DNA markers in the breeding program. The proposed project will be completed with the following objectives: (1) Identify new sources of charcoal rot resistance, (2) Develop new DNA markers for marker-assisted selection for charcoal rot resistance breeding, (2) Apply DNA markers to combine multiple genes for fruit quality and disease resistance. The outcomes from this project will benefit Florida strawberry growers and industries by providing new strawberry varieties for charcoal rot resistance with superior fruit quality.	\$222,378.00
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	4. Field-Deployable Recombinase Polymerase Amplification for Early Detection of Destructive Viruses in Florida Cucurbits and Whiteflies	University of Florida and Agdia Inc. will develop field deployable, rapid, and highly sensitive DNA/RNA-based assays for early detection of highly destructive plant viruses affecting Florida cucurbits. In the recent years, Cucurbit leaf crumple virus (CuLCrV), Cucurbit yellow stunting disorder (CYSDV), and Squash vein yellowing virus (SqVYV) by itself or in mixed infection with other viruses has been causing major yield reduction and affecting fruit quality in North and South Florida. Currently, there are no commercial field deployable diagnostic assays available for CuLCrV, CYSDV, SqVYV. Our team will develop field deployable RPA assays for these viruses in 2020. This will lead to the development of commercial single-step assays with Agdia Inc. and field-testing on all plant parts and whiteflies in 2021. The RPA assays will significantly improve early intervention in reducing risks associated with these viruses for Florida cucurbits in collaboration with seed companies, transplant producers, field producers, extension agents, federal and state agencies and crop consultants.	\$222,341.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	5. Evaluation of Surfactants and Slow-Release Carriers for Improving Pre-Emergent Herbicide Efficacy in Vegetable Plasticulture Production	University of Florida's (UF) Southwest Florida Research and Education Center (SWFREC) and Gulf Coast Research Center (GCREC) will evaluate innovative herbicide placement and application technique for weed management in raised beds under vegetable plasticulture production. The methods evaluated in this project include the utilization of surfactants (e.g., soil surface stickers, deposition agents, etc.) and slow-release carriers (e.g., hydrogel) in combination with pre-emergent herbicides for maximizing weed control in the beds under the plastic mulch. Our research group has previously demonstrated the potential of the 'hydrogel' as slow release carriers for pre-emergent herbicides in vegetable plasticulture production. The preliminary observations show 98 percent control of nutsedge (Cyperus spp.), two months after application, within the raised beds. In this proposed two-year project, surfactants and slow release carriers in combination with pre-emergent herbicides will be evaluated for their (1) weed suppression within plastic beds (e.g., nutsedge emergence) (2) crop safety parameters (e.g., crop vigor, yield), and (3) and method of application for effective weed management. The proposed system has the potential to reduce the risk of crop damage, as well as minimize adverse environmental impacts.	\$135,853.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	6. Development of Criteria for Variable N-Fertilizer and Irrigation Management of Potatoes	Sustainable best management practices that integrate irrigation and N-fertilizer management can effectively reduce irrigation water application and maintain nutrients in the crop root zone. This project will be conducted by the University of Florida in partnership with potato growers. The project aims to develop “criteria for variable N-fertilization and irrigation on potatoes” with in-season adjustment depending on weather variability and crop stage. Growers will have precise information to make decisions of when and how much irrigate and fertilizer the crop, and ultimately make the crop more resilient to weather variability by minimizing N loss while maintaining tuber yields. Trials will be conducted in two commercial potato farms using seepage and sub irrigation with drain tile (SDT), varying timing of N and rate of N-fertilizer application depending measured weather and crop parameters. We will compare three fertilizer strategies in each irrigation method: fixed N-fertilizer rate of 200 lb/ac (recommended); in-seasons decision of a N-fertilizer rate ranging from 200 to 250 lb/ac depending on rainfall; and grower’s practice for N-fertilizer rate and timing (benchmark). Strategies will be modeled with DSSAT-Potato to predict yield and N-leaching. Crop N use efficiency, yield increment, age of crop and potential risk of leaching will determine the need of additional N-fertilizer.	\$182,476.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	7. Reducing Pink Rib/Pinking, a Stress-Induced Disorder in Lettuces, Endive and Escarole	<p>The University of Florida will mitigate the stress-induced disorder, pink rib/pinking, in lettuces and leafy greens by applying treatments to inhibit the biosynthetic pathway that leads to its expression. The focus of this project is to inhibit pink rib/pinking in lettuce, endive and escarole by giving Florida growers, shippers and processors the ability to predict and alleviate its development. Two lines of research will utilize laboratory and field studies: 1) to compare efficacy of L-cysteine, shown to be successful inhibiting the formation of red/brown pigments in laboratory tests, to two additional novel, natural compounds, naringenin and melatonin, that inhibit formation of these pigments, resulting in a commercially viable method for diagnosis and treatment, and 2) to incorporate Florida-adapted lettuce varieties with tolerance to pink rib/pinking into elite breeding lines under development in the UF Lettuce Breeding Program, leading to release of commercially viable cultivars that are less prone to develop this disorder. The anticipated outcome is to enhance the competitiveness of specialty crops by reducing postharvest losses caused by this serious disorder, thereby increasing yields and profitability for growers and fresh-cut processors in Florida while making these crops more accessible to consumers.</p>	\$171,847.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	8. Improving Dragon Fruit Production in Florida: Reducing Economic Losses by Developing Science-Based Disease Management Recommendations	<p>Florida's dragon fruit production has expanded rapidly during the past 15 years. A recent survey estimated over 720 acres of dragon fruit; grown in at least five counties. Along with the increase in acreage, there has been an increase in the diversity and incidence of diseases that affect vines, roots, and fruit. One of the main challenges facing the industry and research and extension faculty is rapid identification of the disease pathogens and availability of disease control products. University of Florida will (1) catalog and characterize diseases affecting dragon fruit production in Miami-Dade County at different seasons, developmental stages and grove age; (2) develop detached stem and fruit inoculation assays to document disease progress; (3) test the efficacy of selected pesticide active ingredients on selected disease agents; (4) develop educational material, including extension publications and field guides, that are easily accessible to growers; (5) offer seminars, workshops, and field days to inform current and potential dragon fruit producers of the results of the project and recommendations on crop management. This project will mitigate the economic losses in dragon fruit production by increasing grower's awareness of the diseases affecting their crop and by developing scientifically-based practical recommendations. In addition, results obtained here will constitute the baseline for further research regarding pesticide efficacy.</p>	\$211,143.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	9. Growth Strategies to Reduce Labor Costs and Increase Sustainability in Low-chill Peaches	The University of Florida will test strategies to reduce the excessive vegetative growth of low-chill peach under tropical and subtropical climates. Factors affecting fruit yield and quality include distribution of light in the canopy, tree training and pruning, crop load, pest and disease control, irrigation, and nutrition - all of which are significantly affected by vegetative growth. Tree vigor control will improve fruit yield and quality, reduce labor costs, and promote improved spray coverage and penetration during foliar application of nutrients, pesticides, and fungicides. Further, if tree size was controlled, growers would benefit from a higher than normal planting density. Vigor control practices in low-chill peach production should maximize orchard productivity and profitability (pruning, thinning, number of trees/acres, fruit quality and size, irrigation cost, labor cost, pest and disease or IPM costs), minimize the environmental impact (pesticides, fungicides, nutrition, and other chemical applications), and provide best management practices for increased sustainability	\$168,561.00
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	10. Improving Hop Production Strategies and Assessing Economic Feasibility to Establish the Viable Hop Industry in Florida	The University of Florida will establish the viable hop production system in Florida by selecting suitable cultivars, modifying trellising, developing pest management recommendations, and assessing the economic feasibility. Research results will be disseminated to stakeholders through on-farm trials, grower meetings, field days, and extension publication. In this project, we will perform field trials at the Gulf Coast Research and Education Center (GCREC) in Balm to evaluate critical production practices for successful hop production in Florida, including 1) modification of trellis design and height, 2) selection of suitable cultivars via long-term evaluation of commercial cultivars and experimental cultivars, and 3) development of management recommendations for arthropod, pathogen and nematode pests. Second, we will perform cost and profitability analysis to assess the economic feasibility of hop production in Florida. The expected outcomes will include 1) number of recommended hop trellis designs in Florida, 2) number of recommended cultivars in Florida, 3) number of Florida growers who will gain knowledge about pest problems and management options for hop production, 4) number of Florida growers who will start growing hops, and 5) number of local breweries who will brew craft beers using hops produced in Florida.	\$259,298.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	11. Labor and Market Challenges to the Florida Blueberry Industry: Impact and Solutions	<p>The Florida blueberry industry has experienced a fast growth in the past decade and is becoming increasingly vital to the state’s economy. However, it has been facing two major challenges, namely, labor challenges and foreign competition. Blueberries, like many other specialty crops, are a labor-intensive crop. Labor challenges in the industry include labor shortages and high labor costs. Labor is by far the largest cost item in blueberry production. Foreign competition, another major challenge closely related to labor, is mainly from Central and South America, particularly Mexico which has the same production window with a significantly lower cost of labor. Policy makers and growers need a thorough study of the impact of these serious challenges and identify solutions. The objectives of this project are twofold. First, the researchers at the Gulf Coast Research and Education Center, University of Florida will analyze the economic impact of labor and market challenges on the industry to inform policy and business decision making. Second, we propose to address the challenges by identifying best management strategies that optimize labor management and mechanical harvesting decisions to make Florida blueberries more competitive in the market. We identify optimal harvesting decisions in labor use, mechanical harvesting, or a combination of both to maximize growers’ profits. The study of new options such as mechanical harvesting is vital to blueberry growers for that and other reasons.</p>	\$111,910.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	12. Labor, Production, Hurricane, and Environmental Aspects of Compact Bed Plasticulture	<p>The University of Florida and University of California will evaluate compact bed designs for fresh produce with regards to: 1) labor efficiency; 2) inputs, yield, water and nutrient efficiency, flooding, and costs; and 3) hurricane (wind) damage; to recommend an optimal bed geometry. The taller and narrower compact beds better fit the wetting patterns of drip-applied water and chemicals. We will evaluate additional potential benefits of reduced: labor stress/time; inputs, costs, and system efficiency; and wind, flooding, and salt damages for tomato. One conventional and three compact geometries will be evaluated at a commercial farm for two seasons. Labor movement (e.g., stooping/bending) will be tracked to determine the time for farm operations (e.g., staking/tying, harvesting); data will be used to evaluate musculoskeletal stress. To evaluate water/nutrient use efficiencies and flooding and salt damages, water, nutrient and salt levels and their movement will be measured along with crop yield. Wind damage to beds (torn/blown plastic) will be assessed in a wind tunnel facility to understand the forces (e.g. uplift) and quantify relative damage. Benefits (e.g. reduced inputs and risks) and trade-offs (e.g. machinery cost) combined with grower feedback will help select optimum bed geometry that is most economically and environmentally sustainable for growers of various sizes and socio-economic background.</p>	\$259,772.00
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	13. UAV-Based High Throughput Phenotyping in Specialty Crops Utilizing Artificial Intelligence	<p>University of Florida's (UF) Southwest Florida Research and Education Center (SWFREC) will develop a remote sensing (UAV-based), low-cost, and automated high throughput phenotyping technique (software), utilizing artificial intelligence (AI) and machine learning (ML), to: (i) detect, count and geo-locate plants; (ii) categorize plants based on their canopy size and height; (iii) develop individual plant health status maps; (iv) predict yield and crop load; and (v) develop a weed pressure map and create a prescription map (compatible with precision equipment) for variable rate applications. Dissemination of results will occur at grower meetings, field days, industry meetings, and production videos illustrating the technology.</p>	\$75,933.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	14. Development of Pepper Weevil Management Program Integrating Biocontrol Agent, Reduced Risk Insecticides and Aggregation Pheromone	<p>The Pepper Weevil (PW) is the most harmful pest of pepper which remains active all year-round incurring 70-90 percent crop loss. Growers use long residual insecticides several times a week aiming at killing adults. This project aims at investigating potentials of a parasitic wasp, <i>Catolaccus Hunteri</i>, of PW both in the laboratory and field situations. The compatibility of <i>C. hunter</i> with biorational pesticides will be tested in a laboratory bioassay and small plot field trials to achieve effective control of PW. Study will also be conducted to enhance population increase of <i>C. hunter</i> during off-season by growing cowpeas and nightshade, alternative hosts of PW, and placing aggregation pheromone in the pepper agroecosystem. The result of these studies will be shared with clientele in field days and by publishing articles in extension and referred journals. The anticipated outcome of this project will be a more sustainable pepper production system with increase knowledge of PW management practices to growers, stakeholders, consultants, scouts and researchers. The short and long-range goal of this program is to increase sustainability, reduce management cost and increase marketable yield. Florida pepper growers will be more competitive than other states by growing more pepper crops and increasing profitability.</p>	\$224,572.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	15. Avoiding the Spread of Fusarium Wilt in Lettuce and First Responses to This Threatening Disease	University of Florida lettuce breeders, in collaboration with plant pathologists and extension agents, will partner with Florida growers to investigate methods for minimizing or even preventing the impact of fusarium wilt of lettuce in Florida. The project will initially focus on confirming the suspected presence of the long-lived pathogen in the histosols of the Everglades Agricultural Area (EAA), the state’s major production area, where lettuce is commonly rotated with other crops. The Florida team will also partner with specialists from California and Arizona, major U.S. production areas that have already been impacted by this disease. It is hoped that their shared experiences will prove helpful in efforts to mitigate the effects of this important pathogen in a new region. Due to the uniqueness of the EAA’s soils, studies will also be conducted to investigate potential impacts of soil type, soil pH, seasonal temperatures, and fallow flooding on the disease. A cultural practice that is a proven method for controlling nematodes, insect pests, and preserving the region’s organic soils, flooding could be instrumental in either controlling or perhaps spreading fusarium wilt. The partnership will initiate screening of lettuce cultivars for Fusarium resistance in three types of lettuce: 1) cultivars currently planted in Florida, 2) available breeding lines, and 3) southern latitude cultivars that are currently non-adapted to Florida.	\$104,302.50

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	16. Improving the Production of Subtropical Blackberries by Artificial Induction and Release of Dormancy Using Defoliant and Gibberellic Acid	University of Florida will improve blackberry production in Florida's subtropical climate by developing production strategies to improve bud break and disseminating results to stakeholders through on-farm trials, grower meetings, field days, and extension publication. This project will focus on developing production strategies that overcome the problems associated with inadequate chilling, including 1) defoliant to induce dormancy, 2) gibberellic acid to break bud dormancy, 3) selection of suitable floricane-fruiting cultivars (high yield potential but high chilling requirements) for defoliant and gibberellic acid treatments, and 4) improving cane management practices for primocane-fruiting cultivars (low chilling requirements but low yields). We will perform field trials at the Gulf Coast Research and Education Center (GCREC) in Balm, as well as at one commercial farm. The expected outcomes will include 1) number of defoliant and gibberellic acid treatments selected as recommended practices, 2) number of floricane-fruiting cultivars identified suitable for defoliant and gibberellic acid treatments, 3) number of primocane-fruiting cultivars identified to improve fruit set by tipping, 4) number of growers who gained knowledge about blackberry management practices.	\$157,646.00
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	17. Improved Techniques for Managing Thrips Vectors of Tospoviruses and Virus Transmission Potential of Melon Thrips	The project will focus on the development of an advanced management program for controlling melon thrips, common blossom thrips, western flower thrips and thrips transmitted tospoviruses. These thrips species occur in South Florida tomato fields and transmit tomato chlorotic spot virus (TCSV) and other tospoviruses. The development of additional tools for thrips and tospoviruses management will be attempted to reduce movement of thrips from outside hosts to tomato. Specific objectives of this project are: 1) Conduct further surveys to determine the seasonal abundance and distribution of thrips on off-season vegetable, ornamental and weed hosts in groves and fallow tomato fields. 2) Determine the effects of vertically placed reflective plastic mulch, chemical insecticides, non-host border crop and a biocontrol agent on the population abundance of thrips and tomato chlorotic spot virus infected plants in tomatoes. 3) Investigate the potential of melon thrips in transmitting tospoviruses in tomato plants.	\$260,387.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	18. Improved Precision Herbicide Application Technology for Vegetable Production	The University of Florida will reduce pesticide inputs in vegetable and berry crops by improving precision herbicide application technologies developed at the University with funding from a previous specialty crop block grant. Drs. Boyd, Schumann and Ampatzidis have successfully developed precision sprayers equipped with machine vision that detect, identify and apply herbicides only where weeds occur. This project will build upon this success by: (1) training neural networks to detect and identify additional weed species, (2) refining our ability to detect where weeds occur within a crop and localize herbicide application to that precise location, (3) developing the capability to adjust the application volume based on weed size and growth stage, and (4) testing and refining the enhanced technology in production fields. Dissemination of results will occur at grower meetings, field days, industry meetings, and production videos illustrating the technology.	\$197,524.00
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	19. Improving Cucurbit Foliar Disease Management through Improved Scheduling and Application of Efficacious Fungicides	Downy mildew, gummy stem blight and powdery mildew are highly explosive diseases of cucurbits (watermelon, squash, cucumber, and cantaloupe) and are intensively managed on conventional farms with fungicides. The diseases can occur separately or together on all cucurbit hosts and can cause up to 100 percent loss if untreated. Powdery mildew is one of the most damaging diseases on squash, and in recent years, it has also become more prevalent in Florida watermelon production for reasons that are not exactly clear, although speculation has varied from shifts in the pathogen population to warmer temperatures. This collaborative project has the objective of improving disease management on these important crops using a decision support system (DSS) to assist with the timing of fungicide applications with the goal of reducing fungicide inputs while maintaining a high level of disease control. An additional need is to establish the efficacy of active ingredients in fungicides to the emerging population of powdery mildew fungus to ascertain if the population is becoming insensitive and thus effectively eliminating the fungicide's usefulness. These two activities should together will prevent unneeded or ineffective fungicide applications and reduce the cost of inputs for growers.	\$285,119.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	20. Developing a Push-Pull System to Manage Whiteflies in Vegetables	<p>The University of Florida will mitigate the spread of whitefly infestation in vegetables by developing a push-pull technology using both visual and semiochemical cues. The push component (repellency) will be achieved by the combined use of kaolin clay and essential oil repellents. The pull component (attraction) will be achieved using visual cues consisting of large yellow banners displayed on the border of the vegetable crop. To accomplish this project, we will determine: 1) The best repellents to be used against whiteflies; 2) the best yellow shade to attract whiteflies and; 3) The best method to combine kaolin clay and essential oils. Laboratory assays will be conducted to screen for different repellents, and different visual attractants, and to compare diffusion of volatiles with different diffusion methods. In parallel, four field trials will be conducted in two locations, two in conventional and two in organic setup in Florida to assess the efficiency of the push-pull system.</p>	\$178,930.80

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	21. Examining Regenerative Farming Practices to Benefit Specialty Crop Growers	Regenerative farming is an emerging concept that incorporates the inter-related practices that result in increased resiliency in the farming system. The University of Florida (UF) will assist specialty crop growers in Florida adopt regenerative farming practices to improve soil quality and evaluate its effect on subsequent specialty crop production. Summer time in South Florida is typically off season, and the fields are frequently fallowed, either dry or flooded. We propose evaluating the application of cover-crops like Sunn Hemp (<i>Crotalaria juncea</i>) and cow-peas (<i>Vigna unguiculata</i>) as green manure options that would perform well in Florida during summer. We anticipate four knowledge-based outcomes to emerge from successfully completing this project. (i) Increased awareness of soil health benefits to specialty crop growers that adopt regenerative farming practice during the summer. (ii) Higher yielding crops - A quantitative (lb/ac) and qualitative assessment of the crop will be conducted to evaluate yields at cooperative farms. (iii) Less input of fertilizer - Increase in extractable nutrient concentrations in the soils will be equated to fertilizer inputs of N, P2O5, and K2O (lb/ac) and potential cost savings (\$/ac). (iv) Increase in number of growers that adopt and adapt regenerative farming practices. This will be achieved by providing outreach services in the form of extension fact-sheets, and field-days to assist growers adopt cover-cropping. The project will address this issue by engaging local vegetable growers in South Florida who either currently practice cover-cropping during the summer or are open to the possibility of trying it out in the future.	\$154,452.00
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	22. Improving Management of Diamondback Moth in Florida Cole Crops	The Vegetable Entomology program at the University of Florida's Gulf Coast Research and Education Center (GCREC) will carry out field trials at GCREC and UF's Hastings Agricultural Extension Center (HAEC) to improve management of diamondback moth (DBM), a key pest of cabbage and other cole crops throughout Florida. Trials will focus on addressing gaps in knowledge regarding optimal placement of soil applied diamide insecticides, which are the among most effective for management of DBM. In addition, DBM populations from across the state will be assessed for susceptibility to key insecticides using a critical dose bioassay. These tests will provide information on the degree to which insecticide resistance is responsible for	\$138,202.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			challenges in managing DBM. Results will be disseminated to growers during field days and through extension publications.	
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	23. Integrated Weed Management System for Sweet Corn	The proposed project will focus on developing an integrated weed management program for sweet corn grown mainly for the fresh market in 23,000 acres in south Florida in the winter and spring. Sweet corn production in the region is heavily reliant on the herbicide atrazine for weed management, which is a major cost of production. However, despite extensive use of atrazine in the crop, weed persistence and resulting yield reduction from weed interference is now common. This is attributed to reduced efficacy of the herbicide. In addition, a shift to mainly grass weed species in sweet corn in south Florida has compounded weed management because atrazine mainly provides broadleaf weed control with little or no effect on grass weeds. Therefore, an economically effective integrated weed management system for sweet corn using other herbicides and weed control tactics that are less reliant on atrazine will be developed to allow for sustenance and expansion of sweet production in south Florida to meet growing regional demand. The proposed project will be conducted in south Florida over two years under supervision of a weed scientist at the University of Florida. The outcome of the research also applicable to other sweet corn production areas in Florida will be disseminated in extension and professional meetings locally and regionally.	\$114,179.00
Florida Department of Agriculture and	\$4,332,309.67	24. Listeria Develops Reduced Sanitizer Sensitivity but Not	The Center for Produce Safety will partner with Cornell University to provide the produce industry with tools for more rapid identification and control of sanitizer-resistant Listeria. Foodborne disease-causing microbes, such as	\$222,787.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Consumer Services		Resistance at Recommended Sanitizer use Levels	Listeria monocytogenes, can survive in food processing facilities over decades. By hiding in places that are difficult to clean or in places with high levels of organic material, Listeria may only be exposed to dilute concentrations of sanitizers. Some Listeria may survive the dilute sanitizer due to mutations (changes in the DNA) or resistance genes, and repeated exposure may lead to survival in increasing sanitizer concentrations. These resistance mechanisms can be passed on and spread across a population, making it more challenging to control Listeria. To better understand the occurrence of resistant bacteria, this project will screen Listeria collected from produce processing facilities for sanitizer resistance. The research team will determine whether continuous exposure to sanitizer can lead to further increased resistance and will perform whole genome sequencing and apply bioinformatic tools to identify possible mutations or resistance genes. The data collected in this project will provide tools for more rapid identification of resistant Listeria and will inform industry which sanitizers may be problematic for resistance. This information will help in the design of improved sanitation strategies such as sanitizer rotation and/or use of higher sanitizer concentrations that overcome resistance.	
Florida Department of Agriculture and Consumer Services	\$4,332,309.67	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$47,616.93

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Georgia Department of Agriculture	\$1,230,019.06	1. Fort Valley State University- Optimizing Cultivation Practices to Develop Turmeric Production in Georgia	It is the aim of Fort Valley State University to boost the economic stability of regional growers by developing high curcumin content turmeric cultivars and best management practices. Our goals are 1) optimizing agronomic practices for small to mid-scale growers, 2) creating genomic resources to breed high-yielding, disease-resistant turmeric varieties, and 3) developing cost of production models for turmeric cultivation in different production systems and formation of consortium that connect producers to supplier/consumers to support an emerging market in climate favorable middle Georgia. Turmeric biomass and curcumin productivity will be measured using different growing systems and intercropping with staple crops. The proper leaf/rhizome age and health condition will be monitored to determine maximum yield and to identify factors responsible for curcumin content in both traditional farming vs hydroponics systems.	\$100,000.00
Georgia Department of Agriculture	\$1,230,019.06	2. Georgia Agricultural Commodity Commission-Georgia Grown - Georgia Grown Taste Test Box	The Georgia Grown Taste Test Box is a project of the Georgia Grown Commodity Commission designed to increase awareness of Georgia Grown specialty crops in schools by using simple and interactive taste test kits. Georgia Grown will partner with a local food box distributor to create a cost share program with schools so they may receive a reduced-price taste test box. Each box will include everything needed for a teacher or school volunteer to have a fun, interactive taste test in the classroom. This is a pilot project to determine if the taste test boxes increase student's awareness of Georgia Grown specialty crops and if the project can become sustainable in its mission.	\$70,000.00
Georgia Department of Agriculture	\$1,230,019.06	3. Georgia Blueberry Growers Association-Growing awareness of Georgia blueberries through learning exhibits	The Georgia Blueberry Growers Association will enhance and make available blueberry information in various forms to provide opportunities for children/youth/adults to expand their knowledge of Georgia's #1 fruit crop. Our major outcome is to augment the competitiveness of blueberries through increased access and awareness through videos, signage, field trips, displays, websites, and visual aids.	\$35,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Georgia Department of Agriculture	\$1,230,019.06	4. Georgia Fruit and Vegetable Growers Association- Providing Educational Resources to Increase Specialty Crop Producer's Profitability (SERVC)	This project addresses the need to increase the profitability of specialty crop growers, packers and shippers by providing timely information, research, education, etc. as they make decisions that impact their family farms and operations, handling practices, employees, and ultimately their markets. The Georgia Fruit and Vegetable Growers Association (GFVGA) will meet this need by planning and coordinating a four-day educational conference and trade show to provide the latest and most current research based educational information on pest management techniques, production practices, regulatory issues, sustainability needs, food safety guidelines, etc. The information from this conference will be organized, archived, and made searchable through an archival, online website of educational content. The website or database will be made available through the GFVGA website.	\$100,000.00
Georgia Department of Agriculture	\$1,230,019.06	5. Georgia Fruit and Vegetable Growers Association - Cost share agreement for development of food safety programs and certifications (FSMA)	The Georgia Fruit and Vegetable Growers Association (GFVGA) will provide 1) on farm food safety education, 2) develop full or partial food safety programs, 3) educate farm and packing facilities on Food Safety Modernization Act (FSMA) rule(s) that may apply, as well as 4) provide cost share for a market driven audit fee and the staff time to conduct the education and program development. This comprehensive approach to on farm food safety is intended to increase the competitiveness of Georgia's specialty crop industry by enhancing the marketability of produce through food safety programs and audits as well as assist in FSMA readiness.	\$85,000.00
Georgia Department of Agriculture	\$1,230,019.06	6. Georgia Fruit and Vegetable Growers Association - Georgia Grown Product Marketing to Reach National Retail Wholesalers (PMA)	This project will provide Georgia specialty growers the opportunity to highlight the Georgia Grown brand and present thousands of wholesale buyers a focused platform as to the diversity and quality produce grown in Georgia. The Georgia Fruit and Vegetable Growers Association, working in cooperation with growers, commodity organizations and agribusiness companies across Georgia, will bring together farm and ranch producers to feature Georgia's specialty crop fresh produce industry at the 2019 PMA Fresh Summit in Anaheim, CA. Fresh Summit will host more than 21,000 produce industry leaders, including retail store and food service buyers looking for new suppliers, gathering new product information and investigating new technologies.	\$40,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Georgia Department of Agriculture	\$1,230,019.06	7. Seven Rivers RC&D Council & UGA - Enhancing Pomegranate Competitiveness by Adding Value and Improving Food Safety	The Seven Rivers RC&D Council, in collaboration with the Department of Food Science and Technology and the Center for Food Product Innovation and Commercialization at the University of Georgia, and the Georgia Pomegranate Association, proposes to enhance the competitiveness of Georgia pomegranate via adding value and improving food safety. The eventual outcome of the project is to introduce local pomegranate and its value-added products to a broader market. Through a holistic approach proposed in the application, the project will 1) help Georgia pomegranate growers to safely deliver value-added products to consumers, 2) provide a sustainable economic return to the members of Georgia Pomegranate Association, and 3) increase the Farm Gate value of our state.	\$100,000.00
Georgia Department of Agriculture	\$1,230,019.06	8. University of Georgia Research Foundation - Building Sustainable Insect Management Programs in Georgia Tree Fruit (Blaauw)	The University of Georgia and the principle investigators propose to develop ecologically-based and cost-effective sustainable IPM strategies. The proposed work will develop innovative tactics to exploit insect pest behavior and enhance biological control to reduce plum curculio (<i>Conotrachelus nenuphar</i> Herbst) pressure in Georgia peach orchards. Additionally, the researchers will use a combination of insect sampling and molecular gut content analysis to quantify predator effects on plum curculio and their prevalence in Georgia peach orchards. The combined approach will document natural enemy activity on plum curculio in peach production and reveal the spatial distribution of plum curculio for targeted management. As consumer demand for ecologically-friendly foods continue to grow, our research and extension program aims to develop more sustainable management practices, which will allow GA peach growers to more effectively meet consumer demands, subsequently increasing their competitiveness in the market.	\$100,000.00
Georgia Department of Agriculture	\$1,230,019.06	9. University of Georgia Research Foundation - Sustainable IPM strategies to enhance competitiveness of snap beans in Georgia (Dutta)	The University of Georgia will develop a sustainable and economically viable management package against the whitefly-transmitted begomovirus complex in snap beans. With SCBGP funding, we intend to further characterize this resistance, and provide a list of resistant cultivars available to growers in three years. Together with resistant cultivars, we will evaluate several cultural and chemical tactics. The cultural tactics will include: optimum	\$100,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			planting date, nitrogen fertility, and mulch. We will also evaluate numerous insecticides and their effectiveness against whiteflies and virus transmission. Additionally, we will conduct cost-benefit analyses to assess how new management tactics will result in increased profits. Finally, we will develop a risk-assessment index based on the management package developed, and make it freely available online and using which, growers can reduce risks prior to planting.	
Georgia Department of Agriculture	\$1,230,019.06	10. University of Georgia Research Foundation - Mitigating the impact of emerging races causing watermelon Fusarium wilt (Ji)	The University of Georgia (UGA) will develop advanced molecular techniques to identify races of <i>Fusarium oxysporum</i> f. sp. <i>niveum</i> , the causal agent of Fusarium wilt of watermelon, and develop integrated and sustainable management approaches to mitigate the impact of this devastating disease. The objectives of this proposal are (1) to develop advanced molecular techniques for rapid identification of races of the pathogen; (2) to screen and identify watermelon accessions for resistance against aggressive races of the pathogen; and (3) to develop integrated programs for effective management of the disease caused by all races. Techniques generated in the project will be readily applicable for disease monitoring and management in commercial watermelon production. This mission-oriented project supports the long-range goal of improving the sustainability and profitability of specialty crop production through the development of economically and environmentally sound disease management tactics.	\$100,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Georgia Department of Agriculture	\$1,230,019.06	11. University of Georgia Research Foundation- Management strategies for ambrosia beetles in tree-nursery, tree-fruit, and pecan (Joseph)	The University of Georgia will develop research-based management tools for pecan and peach orchards as well as ornamental nurseries to mitigate the attacks from ambrosia beetles (<i>Xylosandrus</i> spp.) and the new information will be extended through a series of grower meetings and other Extension outlets. This project will develop a sustainable pest management solution by alleviating the negative impacts of this pest in Georgia through reduction of insecticide usage and increased adoption of newly developed tactics. These outcomes will be documented through grower surveys during meetings in 2020 and 2021. This project proposes a long-term, self-sustaining solution by developing strategies that are not entirely dependent on insecticides. It will document the seasonal incidence and distribution of the pest, improve the pest monitoring tools, and evaluate novel non-chemical management tactics using biochar, kaolin clay and entomopathogenic fungi to reduce ambrosia beetle infestations on trees.	\$73,918.00
Georgia Department of Agriculture	\$1,230,019.06	12. University of Georgia Research Foundation - Rapid molecular detection and fungicide resistance tests for <i>Sclerotinia homoeocarpa</i> (Martinez-Espino)	The University of Georgia will develop and optimize advanced molecular techniques for specific and rapid detection and fungicide testing for <i>Sclerotinia homoeocarpa</i> . This information will aid in better understanding/assessing the impact of <i>S. homoeocarpa</i> and its sensitivity against different fungicides in Georgia. Dollar spot of turfgrass, caused by <i>S. homoeocarpa</i> is an insidious disease and has been recognized as a problem for many decades in Georgia that affects all warm and cool season grasses. In this proposal, we intend to develop and optimize advanced molecular techniques (LAMP, qPCR, port RT-PCR etc.) for specific and rapid detection of <i>S. homoeocarpa</i> and its sensitivity against different fungicides in turfgrass under laboratory and field conditions.	\$95,321.00
Georgia Department of Agriculture	\$1,230,019.06	13. University of Georgia Research Foundation - Statewide survey of citrus greening caused by <i>Candidatus liberibacter asiaticus</i> (Oliver)	Through this project, the University of Georgia will establish a detection network for citrus greening and determine its prevalence within Georgia citrus plantings by educating growers and carrying out surveys for the disease. The outcome of this project will be the first comprehensive assessment of where citrus greening is present within Georgia citrus and it will provide information necessary for growers to take initial steps to manage	\$100,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			this important disease and/or exclude its establishment in commercial citrus orchards.	
Georgia Department of Agriculture	\$1,230,019.06	14. University of Georgia Research Foundation - Method for pre-harvest intervention to control of Listeria monocytogenes in produce (Zhao)	The University of Georgia will evaluate one food-grade strain to treat fresh produce at pre-harvest stage for long-term control of L. monocytogenes. We will use pepper and pepper plants as the model, but the application of this model will be universal for all produce. The purpose of this project is to validate the application procedures of our bio-control method for reduction/elimination of L. monocytogenes in fruits and vegetables. The L. monocytogenes can survive, reappear, and the biofilm becomes more solid than formed previously. The overall objective of this proposal is to develop a ready-to-use biocontrol approach for fresh produce industry and to evaluate its efficacy to remove the L. monocytogenes from fresh produce.	\$32,000.00
Georgia Department of Agriculture	\$1,230,019.06	Grant Administration	To ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$98,367.95
Guam Department of Agriculture	\$243,681.38	Ungulate Management Control and Production of Root Crops for the Recovery, Distribution and Sustainability	The Guam Department of Agriculture will oversee the program, operations, and overall fiscal responsibility of the grant and closely work with stakeholders and producers throughout the grant period to satisfy the expected outcomes and deliverables. The program will address ungulate management control in crop lands devastated by feral pigs concentrating on the reduction in population to enable root crop production as a staple crop and fresh market commodity thus decreasing dependency on imports.	\$243,681.38

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Hawaii Department of Agriculture	\$580,753.00	1. Enhancing Kahumana Farm Hub's specialty crop growers' capacity through increased agroforestry training, education and specialization	Kahumana Organic Farms (KFH) will lead this project to plant fruit trees to the growers and to conduct training workshops, with a focus on improving the marketing of three specialty crops: mangoes, breadfruit, and citrus, based on the foundation built by previously funded work. The objectives of the project are to 1) increase sales of specialty crops to the existing access points; 2) increase the mango, breadfruit, and citrus tree planting; and 3) to develop better information and guidelines about food safety and food quality practices and link them to direct opportunities to improve sales.	\$40,044.00
Hawaii Department of Agriculture	\$580,753.00	2. Integrated Pest Management for Macadamia	The University of Hawaii will lead this project to conduct a two-field study project on integrated pest management in macadamia. The first study will evaluate the use of pruning and living mulches for improved control of macadamia felted coccid and increases in insect diversity while maintaining yield. The second will test herbicide efficacy to reduce herbicide applications and weed resistance while improving weed control and reducing costs. The results will be extended to growers through field days and presentations at the annual Hawaii Macadamia Nut Association meetings.	\$42,109.00
Hawaii Department of Agriculture	\$580,753.00	3. Expanding the Hawaii Market for Hawaii-grown Passion Fruit	Maui Fruit Jewels will lead this project to enhance the competitiveness of locally grown passion fruit (liliko'i) through 1) developing and growing market share of Hawaii-grown liliko'i puree through marketing to the food service and retail sectors in Hawaii; 2) replacing a portion of Hawaii's current consumption of imported liliko'i puree with Hawaii-grown and processed liliko'i puree; 3) partnering with Tiki Farms to grow liliko'is on trellis to create a cultivation model for commercial growers and share results with the farming community in Hawaii; 4) partnering with local non-profit organizations to cultivate liliko'is); and 5) exploring market potential for liliko'i seed oil, an upcycled byproduct of liliko'i processing, as a sub-component of the overall project.	\$40,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Hawaii Department of Agriculture	\$580,753.00	4. Enhancing the Competitiveness of Hawaiian Coffee by Adding Cover Crops and Weather Stations	United Kau Farmers’ Cooperative (UKFC) will lead this project to measure the extent to which cover crops improve soil nutrients, increase retention of soil moisture, and reduce weeds. Successful field trials will demonstrate the use of cover crops by Hawaii coffee farmers, with the aim of building soil health, can cut farm-maintenance costs and conserve water. In addition, the project will pay for weather stations to measure variables that affect plant-nutrient uptake, such as temperature, rainfall, relative humidity, and solar radiation to add invaluable weather data to the public domain by implementing weather stations on five farms in “the coffee belt” of Hawaii Island’s Kau District.	\$40,000.00
Hawaii Department of Agriculture	\$580,753.00	5. HENA’s Outreach Program for New Farmers, New Markets and New Production Methods	The Hawaii Export Nursery Association (HENA) will lead this project to establish relationships with potential distributors outside of California through a trade mission in order to diversify the Hawaii potted foliage industry’s market. New potential distributors will be invited to Hawaii to tour member nurseries and learn the benefits of using Hawaii potted foliage plants. The project will create a comprehensive outreach program to introduce the Hawaii potted ornamental industry to develop relationships and to cultivate student and potential new farmers. In addition, the HENA will also test new agricultural production and biological control products to reduce soil pathogens and enhance growth of foliage.	\$39,750.00
Hawaii Department of Agriculture	\$580,753.00	6. Enhancing Cacao Production and Profitability by Improving Post-Harvest Practices	Oahu Resource Conservation and Development Council (Oahu RC&D) will lead this project to enhance cacao production and profitability through grower adoption of best practices for post-harvest processing tailored for local conditions. This goal will be achieved through the development of innovative, Hawaii-specific tools (informed by cacao experts and experienced local farmers) and production of three on-farm workshops to deliver training and demonstration of best practices applied to the harvest, fermentation and drying of cacao. On-farm workshops will be held on multiple islands and informational resources will be distributed to cacao producers across the state.	\$43,530.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Hawaii Department of Agriculture	\$580,753.00	7. Expanding the Market for Organically Produced Hawaiian Ginger with High Gingerol Content Varieties.	The University of Hawaii will lead this project to complete a series of activities that will result in improved yield and quality of Hawaii-grown ginger, increased availability and consumption of Hawaii-grown ginger; and greater profitability for Hawaii ginger growers. The objects of this project are to: 1) identify ginger varieties with high yield, gingerol content, and determine their viability at different locations in Hawaii; 2) determine the effects of different growing methods on yield; 3) distribute varieties of disease-free ginger seeds to local growers; and 4) disseminate the findings in various outreach activities and develop a ginger production manual. The project will be a collaborative effort between UH and local growers and agencies.	\$40,000.00
Hawaii Department of Agriculture	\$580,753.00	8. Safe Guard Hawaii Papaya Industry by Promoting Clean Vegetative Propagative Materials and Root Shield Techniques	The University of Hawaii (UH) will lead this project to develop economically viable vegetative propagative techniques to mitigate seed shortage, mass produce hermaphrodite papaya from the desired specialty papaya through cuttings to avoid planting unnecessary female papaya plants that are not marketable. The papaya industry in Hawaii is experiencing a shortage of seed supplies. The will work with farmers that are interested to propagate Papaya Ring Spot Virus (PSRV)-resistant variety, "Leia Gold" as a model to prove the concept of hermaphrodite papaya vegetative propagation. The objectives of this proposed project are to educate entrepreneurial farmers on techniques to supply clean propagules, and to encourage the farmers to produce clean planting materials for their production.	\$40,000.00
Hawaii Department of Agriculture	\$580,753.00	9. Hawaii GroupGAP: Neighbor Island Farmer Training & New Market Access Workshop	The North Shore Economic Vitality Partnership (North Shore EVP) will lead this project to expand its USDA GroupGAP program statewide so that farms beyond Oahu can lower the cost of obtaining their Good Agricultural Practices (GAP) certification. By allowing farmers, food hubs, and marketing organizations of all sizes to band together and pool resources to achieve USDA GAP certification, GroupGAP is helping more farmers supply fresh, local specialty crops to retail and institutional markets. The objectives of this project are to: 1) train and obtain USDA Harmonized GAP certification for an additional 15 small to medium-sized specialty crop; 2) establish the first Regional GroupGAP group of neighbor island; and 3) introduce new market access to growers and buyers via a data-driven process.	\$40,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Hawaii Department of Agriculture	\$580,753.00	10. Increase Awareness & Access of Hawaiian Floriculture to the Wedding Industry through HFNA's Educational Program	The Hawaii Floriculture and Nursery Association (HFNA) will lead this project to host an educational seminar with floral designers from each of the main Hawaiian Islands aiming to increase awareness and access of Hawaii floriculture products to the wedding industry. The seminar will demonstrate how to use flowers and foliage distinct to their island to create wedding floral needs. In conjunction with the seminar HFNA will hold a trade show with displays depicting wedding related designs dedicated to each of the major islands. The objectives of the project are to: 1) educate the domestic wedding industry on the superior quality of Hawaii flowers and foliage; 2) provide the wedding industry first-hand trade knowledge of Hawaii flowers and foliage; and 3) create a social media campaign using HFNA's educational videos	\$35,000.00
Hawaii Department of Agriculture	\$580,753.00	11. Educational Marketing Campaign for Five Hawaii Specialty Crops Grown in Diversified Production Systems	Hawaii Ulu Producers Cooperative will lead this project to enhance the competitiveness of five Hawaii specialty crops grown in concert under diversified agroforestry systems by conducting a community-based educational marketing campaign spotlighting specialty crop "champions" including high school culinary arts students, institutional food service managers, celebrity chefs, and local farmers. Through the campaign, these diverse spokespeople will highlight the benefits of minimally processed local ulu (breadfruit), green and ripe papaya, sweet potato, banana, and kabocha squash - all crops that can be grown together in polyculture systems that tend to be more sustainable, profitable and aligned with Hawaii farmers' values than mono-cropping.	\$42,810.00
Hawaii Department of Agriculture	\$580,753.00	12. Promotion of Off-Season Mango Production to Meet Increased Market Demand for Local Produce	The University of Hawaii will lead this project to evaluate and demonstrate through applied field evaluations, workshops and field days, increased consistency of current production and the opportunity for off-season production of mangoes for the State of Hawaii. The project looks to identify strategies that will stimulate the production of local mangoes during the fall to winter months when mangoes typically don't produce. The project also looks to evaluate the economic feasibility of producing mangoes during non-typical production periods.	\$40,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Hawaii Department of Agriculture	\$580,753.00	13. Import Replacement: Increasing Production of Hawaii Specialty Crops	Hawaii Department of Agriculture (HDOA) will lead this project under the procurement rules governing project partner selection/s. The project seeks to award projects that will have Outcomes and Indicators that increase production of specialty crops that are currently imported into the state. The objectives of the project are to 1) increase production of the most imported specialty crops of 2016; 2) utilize domestic suppliers of germplasm of specialty crops that do not require post-entry quarantine.; and 3) minimize the risk to the socially disadvantages and beginning farmers by distributing the germplasm at no charge or at a discount.	\$51,000.00
Hawaii Department of Agriculture	\$580,753.00	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding	\$46,407.77
Idaho State Department of Agriculture	\$2,114,200.54	1. Web-Enabled Site Suitability and Visualization for Idaho's Specialty Crop Industry	Boise State University will lead this project to enhance competitiveness of Idaho specialty crops by expanding an existing web-based site climate suitability and visualization tool, previously developed in support of Idaho's wine industry, to include additional specialty crops of strategic significance to Idaho. The purpose of this project is to expand on a current climate exploration tool to include additional climate indicators relevant to a broader variety of specialty crops. Specifically, this project will: (1) identify stakeholders for each specialty crop; (2) engage with these stakeholders to obtain a list of climate factors used to select sites and cultivars for crop production, (3) use an existing climate database to create spatial layers visualizing the climate factors used by specialty crop growers, and (4) adapt the web-based portal to accommodate a broader range of specialty crops in the region.	\$106,675.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Idaho State Department of Agriculture	\$2,114,200.54	2. Effective Water Management And Soil Conservation For Sustainable Bean Production	The University of Idaho will lead this project to conduct two field experiments to develop sustainable water and soil conservation strategies for garden bean production. The study will focus on the effects of water management using drip irrigation versus furrow irrigation in two tillage systems: conventional and strip tillage. The objectives of this project are to: 1) evaluate the potential benefits of drip irrigation and reduced tillage systems, in comparison to conventional tillage and furrow irrigation, 2) develop grower guidelines for effective irrigation water application in garden beans grown under different tillage systems, and 3) conduct extension outreach.	\$99,921.00
Idaho State Department of Agriculture	\$2,114,200.54	3. Selection of Suitable Tree Architecture and Rootstock for Pedestrian Cherry Production in Idaho	The University of Idaho will lead this project to establish high-density orchards aiming to reduce the cost of production, mainly through the reduction of labor costs, with a focus on the impact of eight rootstocks in combination with three tree architectures on tree growth rate, bloom and harvest dates, leaf mineral nutrients, yield, and quality attributes of cherry under southwest Idaho conditions. The objectives of this project are to 1) study effects of eight size-controlling rootstocks, and three tree architectures (trainings) on growth and yield performance of 'Benton' cherry under conditions of southwest Idaho; 2) study leaf nutrient uptake ability in various rootstocks and tree trainings in southern Idaho; and 3) provide educational programs to teach fruit growers about the use, cultural practices, fruit quality, precocity, and sustainability results on different rootstocks and tree architectures in cherries.	\$163,254.00
Idaho State Department of Agriculture	\$2,114,200.54	4. Building Momentum: Strategic marketing to increase consumer awareness of Idaho wines	The Idaho Grape Growers and Wine Producers Commission (IWC) will lead this project to develop a comprehensive marketing campaign aiming to increase exposure and knowledge about Idaho wines through Increase and broaden national media coverage. The focus will be on maintaining national media relationships, as well as improving local media and consumer awareness through a variety of communication channels and in-person experiences. Elements identified as beneficial to continue to assist the industry's growth include a focus on developing relationships with national media, inbound marketing, local and national advertising. In addition, the	\$314,640.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			project is expected to develop a more consistent and robust digital content creation and programing, as well as significant website enhancements.	
Idaho State Department of Agriculture	\$2,114,200.54	5. Creating Awareness for Idaho Hops through Web Site Development, Social Media, and Informational Newsletters	The Idaho Hop Growers Commission (Commission) will lead this two-year project to develop, creation, and distribute a 5 to 6-minute video showcasing the growing, maturity, harvest, and packing season of Idaho Hops, with still photography provided at each stage of the progress. To further increase awareness, radio advertising will be run on local stations during harvest. The objectives of this project are to 1) increase sales and build demand for Idaho Hops; 2) create an ongoing relationship between Dealers and Idaho growers; 3) enhance the Commission’s web site and Social Media; 4) develop a quarterly newsletter that will be distributed locally as well as nationally; and 5) participate in local promotion, sponsorship opportunities, and purchase radio advertising.	\$35,225.00
Idaho State Department of Agriculture	\$2,114,200.54	6. Precision Water Management For Agronomic, Economic, and Environmental Sustainability of Idaho Hop Production	The Idaho Hop Commission, hop producers, and University of Idaho researchers will collaborate on this project focused on improving the efficiency of water use in hop production. This project will create an efficient water application methodology based on a comprehensive climatological, soil, and plant – related measurements collected throughout the season. The study will serve as a needed starting point for development of a more comprehensive hop grower guide detailing the water and nutrient management for hop varieties commonly grown in Idaho. Extension education will be conducted to encourage the adoption of efficient water management strategies by the Idaho hop producers and will discuss the estimated economic implications of such adoption.	\$107,040.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Idaho State Department of Agriculture	\$2,114,200.54	7. Develop resistance to Pale Cyst Nematode (PCN) in potato via loss of susceptibility	The University of Idaho will lead this project to conduct the research aiming to mitigate the potential impact of the notorious pale cyst nematode (PCN) by developing PCN-resistant potato cultivars via loss of their susceptibility to PCN. The overall goal of this project is to identify potato susceptibility genes targeted by PCN effectors and eventually develop resistance to PCN in potato through elimination of susceptibility genes via CRISPR-based gene editing. The PCN can cause up to 80 percent yield loss in potato. To protect the investment that has been made towards eradicating PCN, developing PCN-resistant potato for Idaho growers is urgently needed. Findings from this research will be presented to the scientific community through publications and presentations at international/national/regional meetings; and to stakeholders at grower meetings such as the UI Potato Conference, the Idaho Plant Protection conference and other appropriate venues.	\$114,328.00
Idaho State Department of Agriculture	\$2,114,200.54	8. Taiwan Marketing Enhancement Program	The Idaho Potato Commission will lead this project to establish a marketing program in Taiwan aiming to increase marketing support for Taiwan importers of Idaho Potatoes and to increase Idaho potato exports to Taiwan. Marketing activities will consist of developing awareness programs for Importers, Retailers, and Foodservice operators. Taiwan government regulations require “late blight” testing, which creates a comparative advantage for the Idaho farmers as Late Blight, a common disease in Washington and Oregon, is extremely uncommon in Idaho. This project will help lower farmers’ production costs by providing access to low-cost Late Blight test so to keep Idaho potatoes at competitively lower price for export market in Taiwan.	\$165,850.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Idaho State Department of Agriculture	\$2,114,200.54	9. Marketing Idaho Specialty Crops through Idaho Preferred Advertising, Social Media, Public Relations and Retail Promotions.	Idaho Preferred will lead this project to promote specialty crops through digital advertising, social media, public relations and retail promotions in 2020 and 2021, with a focus on increasing consumer engagement and purchases of Idaho-grown specialty crops. The digital advertising campaign will air in conjunction with an on-the-road retail tour that will include stops at retailers across the state to promote seasonal specialty crops with radio remotes, on-site demos, sampling and events. Social media will help promote the tour and events as well as increase consumer awareness of seasonal specialty crops. A nursery roadshow will occur in the Spring 2020 promoting locally-grown nursery plants and will be supported by digital and radio advertising.	\$272,365.00
Idaho State Department of Agriculture	\$2,114,200.54	10. Establish best practices for growing truffles and increasing truffle yields in Idaho truffle orchards.	The Idaho Truffle Growers Association will lead this project to develop best practice strategies for production of truffles through the practices of crown pruning, root pruning, and irrigation techniques at specific times during the truffle growing season to create the optimum approach to farming the below ground fungus (how to create feast and famine events in the life of a fungus). We will analyze approximately 4500 soil samples for qPCR analysis to determine truffle mycelium mass and 4500 CO2 samples to determine fungus respiration rates in order to determine the optimal techniques to maximize production of this \$100 per ounce agricultural specialty crop. The study results will be shared with current and future Idaho truffle farmers.	\$111,189.00
Idaho State Department of Agriculture	\$2,114,200.54	11. Building Awareness, and Increasing Sales of Idaho-E. Oregon Onions in Domestic and International Markets	The Idaho-Eastern Oregon Onion Committee (IEOOC) will lead this project to a domestic VIP Tour, Yellow Onion Promotion in Mexico, an international trade mission, and international and domestic trade shows. The objectives of this project are to 1) increase the sales of Idaho and Eastern Oregon onions both domestically and internationally; 2) build on domestic market share and increased awareness for Idaho-E. Oregon onions; 3) create awareness and develop market share for Idaho and Eastern Oregon onions in international markets; and 4) increase exposure and sales of Idaho and Eastern Oregon yellow onions in Mexico.	\$103,400.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Idaho State Department of Agriculture	\$2,114,200.54	12. Controlling nematodes in potatoes by enhancing a suicide hatch in the absence of a host.	The University of Idaho will lead this project to develop a product to improve potato production that targets society's need for safer and more environmentally friendly natural alternatives to synthetic nematicides. This project will apply a natural chemical from seed meal of the mustard <i>Sinapis alba</i> to force the nematode <i>Globodera pallida</i> to hatch in the absence of a suitable host such as potato, creating a suicide hatch through nematode control as a result of. Isolation, concentration, and formulation. The objectives of this project include using an existing pilot plant to extract and concentrate the compound, evaluating economic value of the co-products, testing hatch enhancement with <i>G. pallida</i> to demonstrate efficacy, and collaborating with a potential commercial partner to scale-up the technology.	\$123,648.00
Idaho State Department of Agriculture	\$2,114,200.54	13. Managing onion storage diseases through an integrated approach of diagnostics, modelling and optimum disease management.	The University of Idaho (UI) will lead this project to develop new diagnostic technologies, optimum disease management practices and disease modelling approaches for storage diseases of onion. Onion growers face considerable losses through storage diseases which can lead to a complete rejection of the shipment. Many of these diseases are latent showing no symptoms in the field. UI will develop a novel approach to combat storage diseases comprising of develop a new diagnostic technology to test bulk onion samples for latent diseases prior to storage. The diagnostic technology will also be employed in investigating the epidemiology of the storage pathogens from the field through to storage and will determine the primary means of disease transmission and how disease develops over time.	\$141,070.00
Idaho State Department of Agriculture	\$2,114,200.54	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding	\$254,785.96

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Illinois Department of Agriculture	\$712,592.94	Building Demand Among Low-Income Clients For Specialty Crops Sold at the 61st Street Farmers Market	The 61st Street Farmers Market, a program of the Experimental Station, seeks to further expand our Market’s educational programming and partnership with Carnegie Elementary School and Jackson Park Terrace to rebuild local knowledge of the nutritional benefits and pleasure of consuming fresh and healthy foods, and knowledge of how to grow and prepare them. This grant will enable us to provide enhanced at-Market, point-of promotion, in-school, after-school, and year-round educational programming aimed at teaching more than 2,000 low-income children and adults how to identify, grow, purchase, prepare and enjoy Illinois Specialty Crops sold at the 61st Street Farmers Market. In so doing, the Market seeks to increase SNAP client participation in the Market as well as sales of Illinois Specialty Crops sold there. Through point-of-sale data collection and evaluative surveys, we aim to demonstrate increased demand for and consumption of Illinois Specialty Crops, as a result of robust and dynamic educational outreach in our low-income community.	\$28,660.00
Illinois Department of Agriculture	\$712,592.94	Combining Apiary Inspections and Self-Reported Stakeholder Data to Understand Honey Bee Pest Pressure and Success	The University of Illinois Urbana-Champaign will help improve the Illinois apiculture industry by providing high quality data on the incidence and distribution of Varroa mites and other bee pests. This will be combined with estimations of honey production and surveying of beekeeping practices throughout the season to produce a valuable database to improve knowledge regarding predictors of beekeeping success and honey yields. This will be accomplished through an integration of expanded state inspections and the use of an extension and data collection webtool. The combination of these approaches will provide valuable information about pest pressure and predictors of success in Illinois and set the stage for further development of regionally-specific best management practices.	\$123,944.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Illinois Department of Agriculture	\$712,592.94	Educational Support, Outreach, and Marketing for Illinois Specialty Crops	The Illinois Specialty Growers Association (ISGA) will offer educational opportunities for specialty crop farmers at four regional programs and at the annual Illinois Specialty Crop, Agritourism, and Organic Conference and Food Safety trainings and workshops. This project will provide specialty crop growers the opportunity to become informed on production and marketing topics pertaining to their industry, including keeping up-to-date on some of the newest methods and techniques to ensure top grower performance. Furthermore, this will help to ensure specialty crop farms are in compliance with FSMA Produce Rule.	\$69,317.00
Illinois Department of Agriculture	\$712,592.94	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$32,924.68
Illinois Department of Agriculture	\$712,592.94	Increasing Illinois Specialty Crop Consumption in Marginalized and Immigrant Populations through Resource Development	The Land Connection (TLC) will increase knowledge of and consumption of Illinois specialty crops within marginalized and immigrant populations through the development of short, informational videos and the adaptation of pre-existing resources such as online blogs, specialty crop cards, recipes, etc. These resources will be modified to have a higher Flesch-Kincaid readability score, making them easier to understand, as well as translated into multiple languages – allowing for a greater reach with marginalized populations in our community. This project will increase consumer engagement with Illinois specialty crops through the addition of more specialty crop focused content; provide specialty grow growers, farmers market managers, and other stakeholders access to a variety of content in one convenient location that they can use to boost sales for their operation; assist Illinois specialty crop growers in becoming more economically viable; and increase knowledge of and access to specialty crops in marginalized and immigrant populations.	\$45,942.07

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Illinois Department of Agriculture	\$712,592.94	Increasing Knowledge, Access, and Consumption of Specialty Crops in Northern Illinois	<p>Angelic Organics Learning Center will educate and collaborate with youth and adult leaders in all three operating locations (Rockford, Chicago, and Caledonia) through workshops, camps, and job-training programs. As part of the program, participants will act as peer community educators and advocates for community supported agriculture shares. This project will build on the work currently taking place to highlight community led education and leadership with the goal of increasing consumption of specialty crops. Participants in this program will become peer educators and advocates of community supported agriculture in their communities. In this way the project will address cost and spoilage issues by increasing access to the freshest and most cost-effective fruits and vegetables. And by learning to grow the demand will increase as was evidenced by Brunner’s study on the impacts of gardening</p>	\$61,650.72
Illinois Department of Agriculture	\$712,592.94	Increasing Readiness for Illinois Specialty Growers to Sell to Chicago and Cook County’s Public Institutions	<p>Chicago Food Policy Action Council (CFPAC) will support small and mid-sized Illinois specialty crop growers to sell to the City of Chicago and Cook County Government’s food service vendors, which are in the process of implementing the Good Food Purchasing Program (GFPP). GFPP is a national metrics-based framework that leverages the power of public procurement to create a more transparent and equitable food system CFPAC will use the grant funding to research, conduct outreach, publish resource materials, and host in person events and workshops that will inform Illinois specialty crop growers about market opportunities, required food safety regulations and procedures, and different pathways available to supply public institutions. In addition, CFPAC will work with local producers to identify strategies for aggregating volume and efficiently distributing to food service vendors that serve the City of Chicago and Cook County’s public institutions. Outreach for this project will specifically target socially disadvantaged farmers (women, veterans, and minority-owned operations) looking to scale from direct-to-consumer markets. CFPAC aims to reach at least 80 specialty crop stakeholders in the project and prepare at least 20 specialty growers to sell to the City of Chicago and Cook County.</p>	\$63,270.72

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Illinois Department of Agriculture	\$712,592.94	Making the Connection: Specialty Crop Food Safety, Market Readiness, and Commerce	This project aims to bridge the existing gap between many local, small to mid-sized specialty crop growers and their target markets by executing our nationally recognized farmer training program workshops in both English and Spanish, reaching a total of 60 farmers. The addition of a Spanish speaking workshop will allow us to reach a portion of the more than 700 Latin farmers currently operating in the state of Illinois. FamilyFarmed will offer one Wholesale Success training with the goal of accommodating 30 farmers to provide specialty growers with a comprehensive understanding of food safety requirements and wholesale markets. Additionally, we will offer one market readiness training with a target of 30 farmers, focused on packing, pricing, promotion, size and other key considerations when scaling their food businesses. Finally, FamilyFarmed will facilitate five meetings between specialty crop farmers and wholesale buyers during a targeted market development event hosted by FamilyFarmed.	\$70,164.24
Illinois Department of Agriculture	\$712,592.94	Management of Palmer Amaranth in Horseradish	Southern Illinois University-Carbondale with industry cooperation from the Horseradish Growers of Illinois Association will determine better options for controlling Palmer Amaranth in commercial horseradish fields. Palmer amaranth (<i>Amarathus palmeri</i> S. Watson) has resistance to several different herbicide sites of action and has become the most difficult weed to control in Illinois horseradish production fields in a relatively short period of time. This weed was unknown to Illinois horseradish growers 10 years ago and is now the primary weed found in production fields. The proposed studies will give growers some indication of the minimum length of time in days after planting that Palmer Amaranth control must be achieved in fields to not cause yield reductions and provide the best available herbicide options that can be used to control this devastating weed pest. Results from the project will be disseminated to stakeholders through presentations and printed materials at the annual horseradish grower meeting, as well as by personal contact with individual horseradish growers.	\$39,971.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Illinois Department of Agriculture	\$712,592.94	Meeting People in Need Where They Are: Partnering a Local Farm with Local Government, Service Organizations and Healthcare Providers to Aid with Community Food Engagement, Food Production, and Food Distribution	Sola Gratia Farm aims to expand access to and demand for fresh and healthy produce and nutrition knowledge in low-income/limited access (LI/LA) populations in Urbana and Champaign, where social services are currently lacking. Sola Gratia Farm will: a) continue to partner with the Champaign-Urbana Public Health District (CUPHD) to distribute produce and nutrition knowledge via a weekly pay-what-you can produce market in a LI/LA neighborhood; b) partner with Cunningham Township to further develop an on-site community garden and support its' use for educational and networking events; distribute produce and share cooking and nutritional knowledge through the Township office; and survey Township clients to inform future workshops and events addressing food security needs; c) partner with Habitat for Humanity on development of a community garden in a neighborhood they have been building in and revitalizing for years in order to improve food access, empower residents in food production skills and build community; and d) distribute produce and nutritional information alongside health and wellness screenings, treatment and care provided by Carle Foundation Hospital at their weekly Carle Mobile Health Clinics serving LI/LA neighborhoods including Illinois WorkNet at Parkland Community College and Church of the Living God. These efforts will serve as the start of a pilot produce prescription program.	\$28,515.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Illinois Department of Agriculture	\$712,592.94	Revitalizing Illinois Vineyards: Education Programs to Develop New Growers and Promote Wine-Focused Grape Production in Existing Vineyards	Vineyard acreage in Illinois is declining. As wine growers approach or surpass the age of retirement, the strenuous financial and climatic challenges of vineyard operations too often prevent them from renewing vines that were damaged or being able to hire help in the vineyard. It is imperative that Illinois continues to develop and promote quality-driven local grape production to ensure quality wine, improve crop value, and promote unique regional flavor profiles for the sake of the industry's long-term growth and sustainability. To help reverse this decline in acreage, the Illinois Grape Growers and Vintners Alliance will develop a pilot sentinel vineyard program. These sentinel vineyard owners will work with vineyard and enology specialists to create regional hubs for grower information and demonstrate optimal grape growing practices for specific wine styles. These sites will then be used for educational workshops targeted at potential new growers, while reinforcing core principles of quality-driven winegrowing practices for existing growers in the region.	\$50,265.00
Illinois Department of Agriculture	\$712,592.94	Specialty Crop Education & Consumer Awareness through Illinois Agriculture in the Classroom: Apples Ag Mag	Raising awareness and furthering education on specialty crops is an effective way to engage young consumers in understanding the importance of agriculture, and leading them to healthy food choices, like eating more fresh fruits and vegetables. Illinois Agriculture in the Classroom has a proven track record as a trusted source for educational materials teachers can use to incorporate agriculture into daily classroom lessons. Producing an Ag Mag educational resource focused on Apples provides a positive introduction to agriculture, specialty crops, and the farmers who grow them, by using a popular subject matter that captures students interest and meets learning standards for teachers. Apple Orchards throughout Illinois who engage consumers can also benefit from access to this free educational resource.	\$12,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Illinois Department of Agriculture	\$712,592.94	Understanding the Microbiota of Hydroponic Systems in Illinois to Improve Fresh Produce Safety	Hydroponic farming is gaining popularity in metropolitan areas because it requires relatively small space, less irrigation water, and is less dependent on the season or weather. Hydroponic planting is considered a safe farming method compared to traditional soil-based farming due to its better pest and wild animal control. However, the microbial food safety aspects of this emerging farming method are not well-studied or understood. There is an immediate need to understand the potential risk of pathogen contamination in hydroponic systems. This study, conducted by University of Illinois at Urbana-Champaign, is designed to examine the potential microbial hazards and identify the critical control points in hydroponic farming systems in Illinois. The specific objectives are to: 1) survey regarding the current microbial control strategies for hydroponic farms and the potential contamination sources; 2) examine the microbiota in the hydroponic systems in Illinois; and 3) disseminate the findings to the hydroponic farms and the public.	\$60,353.00
Illinois Department of Agriculture	\$712,592.94	Utilizing Hyperspectral Reflectance Imagery to Improve Fertilizer Efficiency and Sustainability of Hydroponic Lettuce	Western Illinois University will conduct research and deliver educational programs on best management practices for fertilizer management of hydroponic lettuce production for IL growers. Hydroponic lettuce production is popular among specialty crop growers looking for ways to diversify their operations. Many questions exist regarding optimal nutrient management for lettuce production in recirculating hydroponic systems. Currently, data from precision agricultural methods for maximizing nutrient and water use efficiency in hydroponic systems is lacking. This research will enhance nutrient and water use efficiency for the production hydroponic lettuce, which in turn will increase sustainability and profitability of hydroponic lettuce producers in Illinois. Our objectives: (1) Purchase and construct a commercial (NFT) hydroponic system for trial purposes; (2) Evaluate nutrient use by hydroponic lettuce via hyperspectral imaging and visual observation; (3) Host field days to present findings and demonstrate our research; (4) Deliver findings via newsletters and statewide and regional meetings; and (5) Continue to use the hydroponic system for further evaluations.	\$25,466.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Indiana State Department of Agriculture	\$515,250.46	1. Indiana Grown	Indiana Grown will create Public Service Announcements (PSA) to highlight the nutritional value and benefits of specialty crops and air them on television and radio statewide. Indiana Grown will use PSAs to raise awareness, and deliver clear and concise messages, regarding specialty crops. In addition, Indiana Grown will monitor the times, where, and when the PSAs are broadcasted. The PSA is not a commercial rather an informative and specific time and developed method to deliver educational information.	\$75,000.00
Indiana State Department of Agriculture	\$515,250.46	2. Purdue University: Developing Technology and Best Practices for Producing Escherichia coli (E. coli) Free Hydroponic Lettuce	Purdue University will develop technology and best practices for producing Escherichia coli (E. coli) free lettuce in hydroponic farms. In the U.S., two multi-state outbreaks of Shiga toxin producing E. coli O157: H7 resulted in 121 people hospitalized and five deaths in 2018. The outbreaks were linked to the consumption of field-grown contaminated romaine lettuce. Although lettuce grown hydroponically is relatively safer than field-grown lettuce, studies have indicated that hydroponic lettuce is not totally devoid of E. coli contamination. Indiana hydroponics industry is nascent and rapidly developing. An E. coli outbreak originating from a hydroponics farm can potentially change consumer preferences and threaten sustainability of hydroponics industry in Indiana. Purdue University will develop technologies that can reduce E. coli levels in irrigation water using ozone and photo-sterilize plants using UV-LED lights during production. In addition, the project will educate farmers and entrepreneurs on the developed technology and best practices for reducing the risk of E. coli in lettuce grown hydroponically through Extension efforts (e.g., workshops, conferences, social media and printed literature).	\$90,115.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Indiana State Department of Agriculture	\$515,250.46	3. Purdue University: Assessing and Addressing Indiana Specialty Crop Weed Management Research and Outreach Needs	Purdue University will assess and address weed management needs of Indiana specialty crop producers by conducting a survey to determine the greatest weed-related concerns and current weed management practices, conducting research to establish vegetable crop tolerance and weed control data to support product registration and expand weed management options available to producers, conducting research to determine the influence of morning glory interference in cucurbit crops and tomato, and increasing outreach efforts by inviting out-of-state specialty crop weed scientists to address Indiana stakeholders.	\$81,499.00
Indiana State Department of Agriculture	\$515,250.46	4. Purdue University: Dig it...Connecting Soil Health with Productivity and Food Safety in Indiana's Urban Agriculture Sector	Purdue University will support the continued growth and persistence of specialty crop production in urban and peri-urban areas by helping growers quantify the health of their soil and develop targeted approaches to better manage nutrients, reduce severity of soil-borne and foliar diseases, and increase food safety by preventing heavy metal accumulation in produce and potential for foodborne pathogen outbreaks. To accomplish this goal, Purdue University will conduct surveys on farms and community gardens in three metropolitan areas (Fort Wayne, Indianapolis and greater Lafayette) to identify barriers preventing growers from identifying and effectively treating degraded and contaminated soils and optimizing nutrient and disease management plans. After completing this survey, Purdue University will collaborate with a subset of growers to test their soils and identify key soil and environmental factors controlling bioavailability of heavy metals and persistence of plant and foodborne pathogens in vegetable systems. The results of these studies will help these growers develop targeted management plans to overcome site-specific soil health and management issues identified on their farms and gardens.	\$104,568.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Indiana State Department of Agriculture	\$515,250.46	5. Purdue University: Healthy Food, Healthy Environment.... Developing Best Management Practices for Hydroponic/Aquaponic Crop Production in Indiana	Purdue University will help develop best management practices for growing vegetables and herbs in hydroponic and aquaponic systems by integrating multiple strategies, which include comparing crop yield and quality of coupled- and decoupled-aquaponic systems with those of hydroponic systems, reducing the use of Nitrogen (N) and Phosphorus (P), enhancing food safety, and conducting cost-benefit analysis in different production scenarios and disseminate the results to stakeholders through grower meetings, field day, and workshop. By adopting recommended best management practices, Indiana growers will be able to provide fresh and safe produce to local communities and meet the water needs of Indiana.	\$100,314.00
Indiana State Department of Agriculture	\$515,250.46	6. Regulating the Growth of Specialty Greens to Provide Consistency to Local Markets	Green Bridge Growers will develop a comprehensive approach to growing specialty greens to keep up with supply and demand in our local markets, regulating growth to bring our product to customers throughout the year. Consistency of supply will be improved through research and measurement of indicators such as plant varieties that perform best in specific conditions, structures, and micro-climates; integrated pest management practices most appropriate to our cultivars; and evaluating and assessing harvesting efficiencies and the production potential of specialty crops.	\$56,128.00
Indiana State Department of Agriculture	\$515,250.46	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$7,542.88

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Iowa Department of Agriculture and Land Stewardship	\$343,099.64	1. Identifying & Evaluating High Performing Lettuce Types & Varieties for Iowa High Tunnel Growers	The goal of this two-year study is to help Iowa high tunnel growers effectively utilize their high tunnels by growing appropriate lettuce types/cultivars that have high economic value. Iowa State University will conduct research on several lettuce types/varieties and answer the following questions: 1) What are some high performing lettuce types/varieties, 2) How does planting date affect yield and quality, 3) Which cultivars are resistant to bolting, 4) Which cultivars show higher degree of disease resistance, and, 5) what is the economic feasibility of these crops? Data will be collected on air and soil temperatures, several crop growth parameters such as establishment, head diameter, leaf number and area, crop yield, and lettuce quality indices. Study will be conducted at the Iowa State University Horticulture Research Station, Ames, IA and research findings will be highlighted through field days, workshops, and research tours and presented at Iowa Fruit and Vegetable Growers Association (IFVGA) and Practical Farmers of Iowa (PFI) annual conferences. Grower outreach will include an on-farm trial working with Greg Rinehart, Rinehart Family Farms, Ogden, IA.	\$23,994.00
Iowa Department of Agriculture and Land Stewardship	\$343,099.64	2. Improving Food Safety Recordkeeping through Open-Source Software	Iowa Valley RC&D (IVRCD) proposes a project to improve on-farm food safety recordkeeping through Open Source Software. IVRCD will assist 4 eastern Iowa farms who are USDA GAP certified to implement and trial software to improve record keeping by making it more time efficient, user-friendly, and an asset for better in season decision making. Garden Oasis Farm (Coggon), Organic Greens (Kalona), Buffalo Ridge Orchard (Central City), and Kreuger Market (Letts) each achieved USDA GAP Certification in 2017 and 2018 as part of the Iowa Food Hub Group GAP program. At the conclusion of the project, the software will be made available to Iowa fruit and vegetable farms for free. Farms will be able to download the software to improve their food safety record-keeping to comply with the Food Safety Modernization Act Produce Standards/GAP Certification.	\$22,875.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Iowa Department of Agriculture and Land Stewardship	\$343,099.64	3. Farmer to Farmer Vegetable Yield Data Sharing to Improve Farmer Decision-Making	<p>Since 1985, Practical Farmers of Iowa and our members have specialized in farmer-to-farmer knowledge sharing and farmer-led on-farm research. A critical component of this process is open-sharing of farm specific information among farmers, including variety-specific information on vegetable yields. The central objectives of this grant are to more acutely encourage farmer-to-farmer yield data sharing online and in-person at events, to enhance the support network among farmers, and to increase awareness of specialty crops in Iowa. Formal objectives include: (1) 10 specialty crop farmers will serve as “ambassadors” for the Farmer-to-Farmer Vegetable Yield Data website (data.practicalfarmers.org); (2) 30 specialty crop farmers and/or researchers will create profiles and share their yield data on the Farmer-to-Farmer Vegetable Yield Data website; (3) Specialty crop farmers, researchers, and public will have access to over 700 yield records for vegetables, directly from farmers (and mostly from Iowa growers); (4) 250 specialty crop producers in the state; (5) 80 percent of attendees who attend field days will report an increase in knowledge; (6) 60 percent of attendees will report intentions to make changes to their production practices as a result of attending the field days; (7) 90 percent of field day attendees will report that they plan to share what they learned with other farmers; (8) Increase awareness about specialty crop (target 75,000 people) through media about these field days, meet-ups and the Farmer-to-Farmer Vegetable Yield Data website.</p>	\$23,995.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Iowa Department of Agriculture and Land Stewardship	\$343,099.64	4. Increasing Availability of Iowa Grown Fruits and Vegetables in Iowa Schools	The Iowa Department of Agriculture and Land Stewardship (IDAL) will create projects outlined within this grant to increase access of specialty crops in our Iowa schools through the following: (1) Create a program with 5 FFA Chapters that will grow and integrate 3 specialty crops into the school nutrition program; (2) Promote food hubs as an aggregator of Iowa-grown specialty crops by offering a delivery stipend of \$50 to food hubs delivering specialty crops to schools; (3) Expand a web-site that was created to celebrate the Iowa Local Food Day event to offer tools and resources in one easy-to-find location for school food service wishing to procure locally grown produce; (4) Have a strong presence at growers conferences and career fairs to educate growers and potential future growers on Farm to School opportunities. The following benefits will be achieved through these projects: students will have the opportunity to try Iowa grown specialty crops in a school meal; School Food Service will find a new source for specialty crops by working with their FFA Chapter to incorporate their specialty crops into school meals and food hubs will gain new school customers while schools will have the benefit of an aggregated school meals and food hubs will gain new school customers while schools will have the benefit of an aggregated source of local specialty crops with single billing and delivery to their schools.	\$24,000.00
Iowa Department of Agriculture and Land Stewardship	\$343,099.64	5. Growing the Hop Industry through Education to Iowa Craft Breweries & Consumers	Cedar Falls Hops Company will partner with Iowa State University to increase the visibility and competitiveness of Iowa grown hops. This will be done by highlighting comparative laboratory analysis of Iowa grown hops, hosting field days to show hop production practices, and providing education to local consumers via presentations in partnership with local extension offices and craft breweries.	\$23,965.00
Iowa Department of Agriculture and Land Stewardship	\$343,099.64	6. The Impact of Polypore Mushroom Mycelia Extracts on Honey Producing Honeybee Colonies	In partnership with Forest Avenue Outreach, as well as collaboration with Iowa State University's Toth Lab, this project will be measuring the significance of viral reducing polypore mushroom mycelia extract treatments on honey production in honey bee colonies. The impact of virus reduction in colonies subject to extract treatments will be measured by monitoring honey crop weights, colony growth, and overwintering survival over the course of one year, and results will be disseminated to beneficiaries at a 2021 speaking	\$24,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			event, as well as through submissions to both state and nationwide industry publications.	
Iowa Department of Agriculture and Land Stewardship	\$343,099.64	7. Increasing Specialty Crop Availability through Transplant Production & Season Extension Training to Refugee Producers	Through the project Increasing Specialty Crop Availability through Transplant Production and Season Extension Training to Refugee Producers, Lutheran Services in Iowa will provide classroom, in-field and experiential trainings, and a learning plot for farmers to improve their skills and knowledge in the areas of plant propagation, season extension techniques, and utilizing row covers for pest and weed management. Project objectives include 1) Providing classroom training and farm visits with 27 farmers on transplant production and season extension techniques; 2) Developing visual timelines and resources for limited English proficient farmers on transplant production and season extension for diversified vegetable production; 3) Constructing a shared low tunnel at the Global Greens training farm as a group activity and providing access for five advanced market farmers to trial a crop using this season extension method; and 4) Provide graduated supports, technical assistance, and referrals to four transitioning farmers around transplant production and season extension in the areas of: building projects, field walks, purchasing equipment, crop planning, accessing insurance and accounting services, loan applications and various certifications.	\$24,000.00
Iowa Department of Agriculture and Land Stewardship	\$343,099.64	8. Determining Appropriate Organic Fertilizer Application Strategies for Producing Seedling Plugs & Finished	Research at Iowa State University will seek to reduce the amount of synthetic fertilizer applied to seedlings/plugs and Finished containerized culinary herbs grown in greenhouse by developing guidelines for organic fertilization strategies that minimize the amount of organic nutrients that result in healthy, commercially acceptable and marketable culinary herb seedling transplants and finished containerized plants. Results will be distributed through grower meetings as well as industry and extension publications.	\$23,261.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
		Containerized Culinary Herbs		
Iowa Department of Agriculture and Land Stewardship	\$343,099.64	9. Yours, Mine and Ours: A Collective Awareness Campaign for North Iowa Specialty Crop Farmers	The goal of this project is to increase demand for and consumption of specialty crop products and farmers through an awareness campaign that is crafted by a collective effort of farmers, consumer advocates, and Healthy Harvest of North Iowa. Through market research, consultation with a marketing expert, and cooperation with a group of key partners, Healthy Harvest of North Iowa will facilitate the development of a core message about the value, availability, and use of specialty crops. Utilizing visually rich social media platforms and YouTube videos, the campaign will amplify the values of specialty crop products through and with the stories of our participating farmers and will support from consumer contact partners. We will update the Healthy Harvest library of farmer photos, last updated 2017, with eight new farmer photo shoots during the grant. These photos are important resources for the social media images we will plan to use. We are mindful of the lack of any one designated specialty crop or local food campaign in Iowa. This project, while regionally specific, will generate tools and lessons of best practices that we will gladly share through a presentation to a statewide audience such as the Regional Food System Working Group or Practical Farmers of Iowa Annual Conference. We will develop project documents that will increase transferability of the expertise gained through this campaign to support the specialty crop branding efforts across Iowa.	\$24,000.00
Iowa Department of Agriculture and Land Stewardship	\$343,099.64	10. Developing Fertilization Practices for Containerized Iowa Native Prairie & Woodland Plants	Research at Iowa State University will reduce the amount fertilizer applied to containerized native Iowa prairie and woodland plants in greenhouses by developing guidelines for fertilization concentrations that minimize the amount of nutrients that produce healthy, commercially acceptable and marketable containerized Iowa native plants. Results will be distributed through grower meetings as well as industry and Extension publications.	\$23,623.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Iowa Department of Agriculture and Land Stewardship	\$343,099.64	11. Development of a Signature Iowa Wine: Identification of Consumer Preferred Cultivars & Styles	The Midwest Grape and Wine Industry Institute (Department of Food Science and Human Nutrition at Iowa State University) will identify and select exemplary Iowa wines made from statewide Iowa grown cultivars (i.e. varieties) in distinctive styles followed by consumer sensory panels to identify wines that appeal to Iowa wine drinkers. This will lead to a better understanding of which variety and/or style could be used to give the Iowa grape and wine industry a unique identity that has shown to be beneficial in marketing and tourism campaigns of other wine regions around the USA. In conjunction with the consumer sensory panels, information will be obtained as to the consumer awareness of the Iowa wine industry. This will aid in developing the marketing by understanding how consumers are currently engaging with the Iowa wine industry.	\$17,436.00
Iowa Department of Agriculture and Land Stewardship	\$343,099.64	12. Using the Life Cycle Assessment for Evaluation & Recommendation of Sustainable Practices in the Grape & Wine Industry	Researchers at Iowa State University will apply the methods of Life Cycle Assessment (LCA) to develop and deliver the first LCA-based recommendations of sustainable practices for the Iowa grape and wine industry. LCA is a standardized, science-based tool for quantifying the environmental impacts and efficiency of products and processes. Baseline data will be collected by visiting Iowa vineyards and wineries and interviewing grape and wine producers. These data, along with detailed data from LCA professionals, will be used within a specialized LCA computer program to 1) analyze and model sustainability of the grape and wine industry in Iowa, 2) identify hotspots and priorities for improving sustainable practices based on LCA results, and 3) compare the impact and efficiency of production practices adjusted to reduce the effects of these hotspots and impact priority areas in order to define and outline best sustainable production practices for the Iowa grape and wine industry. Results and recommendations will be provided to Iowa grape and wine producers through presentations at the Iowa Wine Growers Association (IWGA) annual conference, and through an open-access extension publication. Extended outreach will be provided through publication in an open access, peer-reviewed journal, and through presentations at an American Society for Horticultural Science (ASHS) annual conference.	\$20,684.40

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Iowa Department of Agriculture and Land Stewardship	\$343,099.64	13. Iowa Specialty Crop Conference	Many of the Associations in Iowa's Specialty Crop Industry are struggling to stay competitive. As the industry continues to evolve, the current conferences and trade shows are lacking the change, innovation and vitality to support and increase this sector of farming. With few resources and an ever-changing market, this new generation needs the tools to sustain and grow their specialty crop/agritourism businesses. Many of these associations are now reaching out to the Iowa Department of Agriculture and Land Stewardship to create a platform that will unite these different agencies, by allowing them to provide an educational opportunity to support diversity in agriculture while allowing them to maintain their associations. IDALS will work in conjunction with the stakeholders of the specialty crop industry in our state to create a conference/trade show that will showcase Iowa's farmers and our many specialty crops. Key partners include Iowa Fruit and Vegetable Growers Association, Iowa Wine Growers Association and Iowa State University.	\$30,000.00
Iowa Department of Agriculture and Land Stewardship	\$343,099.64	Grant Administration	To ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$32,509.24

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Kansas Department of Agriculture	\$373,576.19	1. Improving yield, quality and economic potential of strawberries growing under high tunnels in Kansas	Kansas State Research and Extension (KRSE) will conduct a comprehensive investigation of the economic potential of spring-planted day-neutral strawberry high tunnel production (HT) compared with tomato production in the same system, in Kansas. We will also conduct replicated trials at the K-STATE Olathe Horticulture Research and Extension Center to investigate the effect of different types of mulching on yield and quality of day-neutral strawberries growing in HTs and their effect on the profitability for this crop. The overall goal of this proposal is to increase the production of fresh strawberries in Kansas, which will result in the increase of availability and accessibility of fresh strawberries in the state. Additionally, we are expecting that we are going to provide Kansas growers the practical information that they need to introduce an alternative to the HT tomato crop, like strawberries. Our specific outcomes include: 1) production budget for day-neutral strawberry production in HTs in Kansas, 2) research-based knowledge relevant to the use of the appropriate mulch for day-neutral strawberry production, 3) extension outputs such as publications, videos, social media, and field days.	\$67,990.32
Kansas Department of Agriculture	\$373,576.19	2. Enhancing High Density Apple Production in Eastern Kansas with Drape Netting	Johnson County Extension, in collaboration with Douglas County Extension, Gieringer's Family Orchard & Berry Farm, and South Baldwin Farms will trial the commercial viability of protective drape netting in local high-density apple orchards to decrease fruit loss caused by hail, sun, and pest damage. Johnson County Extension will use grant funds to purchase a specialized hydraulic net applicator and drape netting for on-farm research and future rental to local fruit producers at little to no cost. Results from on-farm trials will be disseminated through a mix of publications, field days, online videos, and extension presentations.	\$35,084.56

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Kansas Department of Agriculture	\$373,576.19	3. Novel and sustainable wash-water systems for improving the safety and quality of leafy greens	Leafy greens are a growing specialty crop commodity area in Kansas. Episodes of foodborne illnesses linked to fresh and minimally processed produce, especially leafy greens, are still a big concern in the nation. Therefore, produce growers and processors are in need of innovative solutions to ensure produce safety and quality without altering existing handling practices, preferentially using sustainable ingredients to meet the organic production requirements. Kansas State Research and Extension (KSRE) will collaborate with growers to implement cost-effective and sustainable antimicrobial wash-water systems to increase the safety, shelf-life, and therefore the competitiveness, of leafy greens produced in Kansas. Specifically, we will use combinations of organic acids, essential oils, cationic surfactants (e.g., lauric arginate) to create synergistic effects and enhance surface interactions for elimination of pathogenic microorganisms and reducing the total microbial count more than traditional methods. The quality of the products, such as visual appearance, color, and texture, will be evaluated in addition to consumer panels. The findings will be promoted using social media, meetings with grower groups, such the annual Great Plains Growers Conference & Trade show, and local market outlets (e.g. farmer markets). The team will also collect data through a survey regarding current washing practices and perception of postharvest safety of leafy green producers to increase the visibility of specialty crops in Kansas.	\$54,174.96
Kansas Department of Agriculture	\$373,576.19	4. GAPs certification funding and produce safety outreach for Kansas growers	Kansas State Research and Extension (KSRE) will assist at least 14 Kansas (KS) fruit and vegetable producers to earn USDA Good Agricultural Practices (GAPs) certification during the project, which will help growers access new markets which require that certification. This will help improve the profitability of KS fruit and vegetable producers. Accordingly, we envisage the following activities: 1) Provide produce safety workshops and on-farm technical assistance to assist farmers with obtaining GAPs certification. 2) Establish a GAPs certification cost- share program. 3) Provide microbial water testing to farmers, which is a requirement for GAP certification. This project will build on the success of our previous and current produce safety training efforts, including on general produce safety, as well as on the Food and Drug Administration (FDA) Food Safety Modernization Act (FSMA) Produce Safety	\$57,875.04

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			<p>Rule. We will also continue to share information that can help KS produce growers obtain GAP certification on our KSRE produce safety website, so other farmers can also access that information.</p>	
<p>Kansas Department of Agriculture</p>	<p>\$373,576.19</p>	<p>5. Enhancing Beginning Farmer Training and Market Access in Northeast, KS</p>	<p>K-State Research & Extension-Douglas County will collaborate with the Common Ground program managed by the Lawrence-Douglas County sustainability Office to build relationships with the economic development community, specialty crop buyers, and educational partners that lead to a long-term Sustainability Action Plan for an improved beginning specialty crop farmer training program at the Common Ground Incubator Farm. This will include a series of hands-on workshops for beginning producers at the Incubator Farm. The model developed and lessons learned will be shared with other specialty crop technical assistance providers and economic development organizations in Kansas.</p>	<p>\$44,739.00</p>

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Kansas Department of Agriculture	\$373,576.19	6. Specialty Crop Conference Education Support	Specialty crops are a growing industry in Kansas. The Kansas Department of Agriculture recognizes there are insufficient learning opportunities available to Kansas growers. These specialty crop focused conferences will provide Kansas specialty crop growers an opportunity to learn and discover valuable tools and resources that will help them be more competitive and discover new opportunities. The beneficiaries of this project will learn more about topics such as: fruit crops, vegetable crops, other specialty crops, greenhouse crop production and marketing, farm marketing ideas and operations, farmers' markets, organic production, marketing, food safety, and labor. This project will financially assist Kansas specialty crop growers in attending a recognized conference focused on specialty crop growing techniques and industry to increase their knowledge base. Specialty crop growers will also be able to develop a plan of action to incorporate knowledge gained into their operations. The specialty crop growers benefiting from this project will complete three surveys throughout the duration of this grant to measure and evaluate learning outcomes, implementation, and end results (e.g. increase in yields, increased efficiency, access to a new type of market, increase in sales, implementation of new technologies, etc.)	\$25,500.00
Kansas Department of Agriculture	\$373,576.19	7. Identifying Best Management Practices for Upright Dry Bean Production in Northwest Kansas	Dry edible beans have been a long-standing specialty crop in Northwest Kansas. They are a unique cropping option in this region as they are a high value specialty crop destined for human consumption. They are an economically viable legume pulse crop in a region whose cropping rotations are typically dominated by grass species, specifically irrigated corn. Research regarding production practices has not been conducted in decades. In recent years, producers have shifted their production systems towards growing upright type varieties instead of vine types. This shift in production practice has reduced or eliminated some of the barriers to entry for new growers. Optimal management practices have likely changed with this transition from vine-type to upright dry edible beans. Research by Kansas State University will establish best management practices for upright dry edible beans. In addition, this project will evaluate several other management questions developed from producer interviews. Extension activities will communicate findings to current and potential future dry bean growers.	\$38,223.36

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Kansas Department of Agriculture	\$373,576.19	8. Increasing regional vegetable production and distribution capacity for grocer markets in Western Kansas	The Greater Northwest Kansas Community Foundation (GNWKCF) will partner with local producers and grocers along with the High Plains Food Co-op (HPFC) and Advancing Rural Prosperity, Inc. (ARPI) to assist producers in Northwest Kansas scale up vegetable production and prepare to deliver to local grocery markets. The outcomes this project strives to achieve are to: increase supply of specialty crops, primarily vegetables, from area producers; establish HPFC relationship and role with grocery system; strengthen HPFC aggregation and distribution system and food-safety protocols; increase markets for specialty crops through local grocers; and improve the local economy through specialty crop development. This project will help address food supply and access related to vegetable production and grocer markets within the High Plains food shed that includes Northwest Kansas. This will be accomplished by supporting expansion of growth-oriented vegetable producers with expansion planning and implementation assistance and recruiting new producers. Development of a delivery mechanism to grocers within the HPFC distribution system will be initiated, food safety of the distribution system will be considered, and grocer markets will be developed.	\$42,250.00
Kansas Department of Agriculture	\$373,576.19	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$7,688.00
Kentucky Department of Agriculture	\$339,582.66	1. Tomato grafting for plant-parasitic nematode management in Kentucky high tunnels	The University of Kentucky (UK) will lead this project to evaluate grafted rootstocks for root knot nematode resistance in Kentucky high tunnel systems to determine the level of pressure that plant-parasitic nematodes exert on vegetable cropping systems across the state of Kentucky, specifically in high tunnels. The UK will also host workshops to train county extension agents on the proper methods of grafting as well as publishing the results of the trials, including how grafting can improve soilborne disease resistance, crop yield, plant vigor, stress tolerance, and teach them how to graft and train them how to train and educate growers in their communities on grafting.	\$71,067.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Kentucky Department of Agriculture	\$339,582.66	2. Cultivate Kentucky Partnership Quality Assurance Initiative	The Cultivate Kentucky Partnership (CKYP) will lead this project to expand its Quality Assurance Initiative efforts to include grower education focused on developing and implementing quality assurance protocols for the wholesale specialty crop market, which includes one-on-one technical assistance, development and delivery of training on quality management protocols, and a series of field days across Kentucky. This project aims to ensure an integrated network of technical assistance and connect the dots between business and production planning for wholesale specialty crop growers.	\$48,600.00
Kentucky Department of Agriculture	\$339,582.66	3. Super Snax Program: Leveraging Marketing Efforts to Expand Specialty Crop Access and Consumption for Children	Need More Acres and the partners will lead the Super Snax Program to offer specialty crop taste testing in schools with the purpose of leveraging marketing efforts to expand access and increase consumption of fruits and vegetables in children. This project aims to encourage students to try new varieties of fresh fruit and vegetables, increase their nutrition knowledge and increase their future consumption of specialty crops; and to expand market opportunity for local farmers. This project will increase nutrition knowledge and consumption of specialty crops students consume by including new and unique fruits and vegetables. The project also aims to create a community wide branding effort that would help connect consumers to healthy fruit and vegetable options.	\$47,677.00
Kentucky Department of Agriculture	\$339,582.66	4. Kentucky's Small Fruit Industry Assessment to Increase Grower Competitiveness	The Kentucky Horticulture Council will lead this project to conduct an assessment to determine the status of the small fruit industry in Kentucky through grower and mid-tier value chain operation surveys to document and address local, regional, and national challenges confronting specialty crop small fruit growers. Small fruit crops include blueberries, blackberries, and strawberries as well as raspberries, elderberries, and table grapes. Collected data will be used to develop an assessment report and current industry model. Stakeholders will gather to develop recommendations for specific research projects, educational programs, market development tools, and policies needed to ensure competitiveness of the small fruit specialty crop industry by expanding access to and availability of locally-grown small fruits in Kentucky.	\$49,901.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Kentucky Department of Agriculture	\$339,582.66	5. Plate It Up! Kentucky Proud: Sustainability Project	The University of Kentucky (UK) will partner with the Kentucky Department of Agriculture to lead this project to connect the expertise of faculty and staff at UK, community partners, and local producers to increase demand for Kentucky specialty crops The Plate It Up! Kentucky Proud (PIUKP) Sustainability Project will include the development of innovative educational resources and presentation tool kits related to the benefits of purchasing and consuming locally grown specialty crops as part of a commitment to promoting sustainability in the community and consuming a sustainable diet. This project aims to promote consumer purchase and preparation of locally grown fruits, vegetables, nuts, and herbs, thus improving health and supporting local specialty crop producers.	\$50,000.00
Kentucky Department of Agriculture	\$339,582.66	6. Developing Management Tools against Invasive Ambrosia Beetles Affecting Apples and Nurseries in Kentucky	The University of Kentucky-Research-Foundation (UK-RF) will lead this project to evaluate and improve horticultural practices to disrupt ambrosia beetles (AB) infestations; monitor AB populations and develop management strategies to lessen AB attack to apple trees and ornamental nursery stocks; and effectively disseminate information obtained in this project. The overall purpose of this project is to improve horticultural practices and provide sustainable pest management tactics against invasive ambrosia beetle (AB) species affecting the establishment of young apple and landscape trees in orchards and nurseries in Kentucky.	\$21,786.00
Kentucky Department of Agriculture	\$339,582.66	7. Expanding Local Specialty Crop Availability	The SoKY Marketplace and its partners will lead this project to offer farmers educational tools and technical support that allow them to diversify their products and introduce new specialty crops that are not readily available at local farmers markets. This effort will increase income for farmers and access for consumers while strengthening the local food economy. Specifically, the project will host educational workshops for farmers and provide information to consumers through cooking demonstrations and social media promotion. The project will also utilize social media to promote the information provided in the educational workshops and cooking demonstrations to increase the reach to more consumers and producers.	\$23,568.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Kentucky Department of Agriculture	\$339,582.66	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$26,968.16
Louisiana Department of Agriculture and Forestry	\$405,873.58	1. Application of Ultraviolet Light to Reduce Microbial Loads and Extend Fresh Strawberries' Life	Strawberries are a popular fruit among consumers. In general, harvested strawberries are not washed before they are placed in retail packages because small amounts of moisture can lead to rapid decay primarily due to the growth of Botrytis cinerea. The Food Safety Modernization Act, (FSMA) requires producers to address food safety concerns such as the presence of pathogens on fresh produce. Ultraviolet-C (UV-C, 254 nm) light use has been approved by FDA for the inactivation of microorganisms. A pilot scale ultraviolet light system at LSU Agricultural Center may reduce microbial loads and extend fresh strawberries' shelf life. It is designed to reduce pathogen and spoilage microbial loads. Our preliminary study showed that the UV lights have the potential to reduce the microbial loads on fresh produce and extend shelf life. The proposed study is to determine the effectiveness of the UV lights in reducing Salmonella enterica, Listeria monocytogenes, and Escherichia coli O157:H7 levels on the surface of strawberries, and in reducing spoilage microbial loads for extending the shelf life. Nonpathogenic bacteria Enterococcus faecium, L. innocua B-33016 and E. coli ATTC 25922 will be used as surrogates to evaluate the effectiveness of the UV lights. We will use various UV light dosages on fresh harvested strawberries with pathogenic bacteria surrogates (non-pathogenic bacteria) and spoilage microorganisms prior to their packing to determine the effectiveness.	\$37,899.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Louisiana Department of Agriculture and Forestry	\$405,873.58	2. Identifying Best Practices to Increase Productivity and Minimize Food Safety Risk Associated with Hydroponic System	Hydroponic systems are a method to grow crops in which water-soluble fertilizers solution are used to provide nutrients to the crops. Most bacterial pathogens required similar type of nutrient for growth. Understanding fate of pathogens in a hydroponic system is crucial for food safety risk assessment and to develop control strategies to mitigate foodborne hazards. The overall goal of this project is to investigate the fate and dissemination of foodborne hazards in a hydroponic production environment and to develop strategies using sanitizers and UVC light technology to reduce microbial hazards for fresh produce. This project will be conducted at the LSU AgCenter and will evaluate the growth and survival of <i>Listeria monocytogenes</i> on fertilizer solution used in the hydroponic system. Furthermore, this project will develop appropriate treatment techniques to minimize food safety risk and maintain the productivity of specialty crops grown with hydroponic system. This advancement in evaluating and managing food safety practices will help Louisiana’s hydroponic producers growing specialty crops such as lettuce, strawberry, and tomatoes to minimize food safety risks and meets the regulatory and market driven food safety requirements. The outcomes of this project will help build upon researcher and grower knowledge of food safety risk associated with hydroponic system and optimize disinfection techniques for specialty crop production. The results from this study will be disseminated to Louisiana specialty crop growers through Dr. Adhikari’s ongoing food safety training, LSU AgCenter extension outreach programs, and presentation during Louisiana Fruit and Vegetable Growers Association meeting.	\$51,900.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Louisiana Department of Agriculture and Forestry	\$405,873.58	3. Education for Southeast Louisiana Specialty Crop Farmers on Best Pest Management Practices	This is a Louisiana Department of Agriculture and forestry (LDAF) project to enhance the competitiveness of specialty crops by implementing an education program for specialty crop producers in southeast Louisiana on abatement of a serious, invasive, agricultural pest – wild hogs. The damage wild hogs render to agricultural land and crops is a significant and growing concern for specialty crop producers in the region. It is significant because fifteen parishes in southeast Louisiana produced over 40 percent of fruits, nuts, sod, and vegetables in our state in 2017. This one-year project builds upon a previous project for specialty crop farmers in eight southeast parishes as the need for additional and expanded education has become increasingly apparent. LDAF will educate specialty crop producers in mitigating the damage wild hogs render to specialty crops in 15 parishes in southeast Louisiana, including Ascension, Avoyelles, East Baton Rouge, East Feliciana, Livingston, Pointe Coupee, St. Helena, St. James, St. John, St. Landry, St. Tammany, Tangipahoa, Washington, West Baton Rouge, and West Feliciana Parishes. Specialty crop producers in these parishes will receive education on best management practices to control the pest.	\$49,788.00
Louisiana Department of Agriculture and Forestry	\$405,873.58	4. Developing a Sustainable Nanocoating Material for Extending the Market Life and Quality of Louisiana Fruit Crops	The LSU Agricultural Center (LSU AgCenter) research team for this project will develop a new technology to extend the market life and nutritional quality of Louisiana grown fruit crops after harvest. This will be accomplished by creating a sustainable and edible nanocoating material and demonstrating its positive effect on fruit postharvest quality and market characteristics.	\$92,280.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Louisiana Department of Agriculture and Forestry	\$405,873.58	5. Develop a Value-Adding Food Safety Educational Program for Louisiana Specialty Crop Growers	<p>To assist the specialty crop growers who are entering a value-added business, Louisiana State University Agricultural Center (LSU AgCenter) will work in partnership with Louisiana Fruit and Vegetable Growers Association to develop a science-based value-adding educational program. Within the LSU AgCenter, four groups of experts will work collaboratively including the School of Nutrition and Food Sciences (SNFS), Food Incubator (Incubator), Department of Communications (Communications), and the Department of Agricultural & Extension Education & Evaluation (AEEE). SNFS (PI's home department) delivers quality education and provides training, consultation and services to meet the needs of the local, national and international food industries and consumers. Incubator scientists and staff will assist the proposed project by providing success case-study examples for the workshops and videos. The participants of the workshops will also have access of business plan and marketing resources the Incubator offers. Communications consists of 20 professionals who are experts in news, graphic design (print and video), high value production including documentary and promotional videos, animation to demonstrate complex scientific concepts to general public, magazines (electronic and print), as well as social media. AEEE (Co-PI's home department) provides expertise in program evaluation. We will use qualitative and quantitative approaches to identify the unique barrier for Louisiana specialty crop growers to enter value-added business. We will then develop, pilot, deliver, and evaluate a value-adding educational program for the specialty crop growers who are entering the value-added business. Louisiana Fruit and Vegetable Growers Association will provide input throughout the entire project.</p>	\$58,849.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Louisiana Department of Agriculture and Forestry	\$405,873.58	6. Increasing Labor Efficiency in Louisiana's Nursery Industry Through Benchmarking Current Labor Practices	<p>The LSU Agricultural Center will investigate current labor practices involving common tasks that can be normalized across the entire diverse Louisiana nursery industry (i.e. transplanting cuttings, pulling orders, loading trucks, etc.). Labor use (i.e. labor-hours) benchmarks will be established for each observed task at a group of nurseries selected to represent the entire Louisiana nursery industry. This information will then be utilized to determine costs associated with each task on multiple scales (i.e. per plant, per truck, per container, etc.). LSU Agricultural Center scientists and Louisiana nursery professionals will then work together to identify important procedures and methods for increasing labor use efficiency in the observed tasks. Best management practices for labor utilization will be developed for the Louisiana nursery industry. The overall goal of this research is to provide nursery professionals with a standard to their current labor productivity. Understanding the labor efficiency of their specific nursery relative to the industry will allow for the identification of problematic areas as well as the identification of successful areas within each nursery. Professionals can then reallocate labor usage or provide additional training in specific areas to increase the efficiency. These Best Management Practices and the efficiency benchmarks will be disseminated to stakeholders and industry professionals through Extension publications, on-farm visits from LSU Agricultural Center faculty, an industry field day workshop, and presentations. Additional assistance with interpreting results and implementation of Best Management Practices will be provided to any grower through LSU Agricultural Center Extension faculty.</p>	\$35,601.26

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Louisiana Department of Agriculture and Forestry	\$405,873.58	7. Apprenticeship Trainee Project For Growing New Beekeepers in Louisiana	Louisiana Department of Agriculture and Forestry (LDAF), in partnership with Louisiana Beekeepers Association, will enhance the competitiveness of specialty crops through a beekeeping program focused on specialty crop development of sustainability production practices in the area of beginning farmers. A growing interest in developing honey production and a need for additional beekeeping in the state is apparent. Experienced beekeepers are concerned over a decline in small beekeeping enterprises, the increasing age of Louisiana beekeepers, and attracting young people as beekeepers into the industry. Experts indicate barriers to becoming a beekeeper are the financial costs, the time it takes to care for bee colonies, and the general perception that it is a specialty crop industry too complicated for young farmers to understand or start up. LDAF will address some of these concerns by implementing the Apprenticeship Trainee Project for Growing New Beekeepers in Louisiana. This program addresses the loss of small producer operated bee hives due to beekeeper aging and the need for a new generation of beekeepers to maintain the industry and benefit overall specialty crop production in Louisiana.	\$24,500.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Louisiana Department of Agriculture and Forestry	\$405,873.58	8. Hustle & Grow Youth Education Program - Education Program on Urban Farming and Increased Access to Specialty Crops	The Walls Project's Hustle & Grow program will teach high school students the business of urban agriculture through community farming. The program empowers surrounding neighborhoods to develop a sustainable food system and land stewardship ethic through outdoor hands-on experiences in growing, producing, and distributing fresh food in an urban setting. Fresh produce grown at the four-acre Baton Roots Community Farm at BREC Howell Park will go directly to the surrounding 70805 community and may be sold at a farmers' market located on site. This farm was collaboratively developed with Louisiana 4-H, leveraging subject matter expertise from LSU Ag, Southern Ag, and BR Green, with input and participation from Mount Pilgrim, Star Hill, and Living Faith churches. Baton Roots incorporates best practices from similar organizations with impressive track records: The Food Project (Boston, MA); Grow Dat (New Orleans, LA); Urban Roots (Austin, TX); Acta Non Verba (Oakland, CA); EarthDance Organic Farming School (Ferguson, MO); and The Youth Farm (New York, NY). Baton Roots differentiates itself from similar urban farming initiatives by addressing the food security needs of a specific community with a fresh arts-integrated approach. Baton Roots engages residents of all ages through thoughtful, strategically customized programming, meeting each participant at their level of interest.	\$22,540.00
Louisiana Department of Agriculture and Forestry	\$405,873.58	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$32,465.84

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Maine Department of Agriculture, Conservation, and Forestry	\$639,624.67	1. Food Safety Planning	AgMatters LLC’s “Food Safety Planning” is year two of a three-year proposal that will provide growers the training and understanding needed to streamline recordkeeping processes that comply with third-party audit standards as well as the Produce Safety Rule. “Food Safety Planning” is for all farms in Maine to help them to determine what they need to log and keep track of and will go one step further in that it will also guide growers to examine these records that they are mandated to keep and glean information from them that may inform their business decision making. It is possible to combine all requirements into one system. This will mean looking critically at the farm system to determine priority areas, determining what training needs consist of, figuring out what is needed to provide proof of performance, assisting with the writing of Standard Operating Procedures (SOPs), or the organization of materials and logs for traceability and possible recalls. This grant will assist growers as they prepare to grow and establish new markets, each with their own specific requirements regarding food safety. The ability to coordinate record keeping that meets the requirements of both a third-party audit and the Produce Safety Rule will enable efficiency and has the potential to save money. The ability to utilize mandated records in making business decisions may also save money.	\$27,000.00
Maine Department of Agriculture, Conservation, and Forestry	\$639,624.67	2. Keeping Up with the Produce Safety Rule	“Keeping Up With the Produce Safety Rule”, year two of three, as proposed by AgMatters LLC, will offer all Maine Specialty Crop Growers opportunities to be made aware of the Produce Safety Rule (PSR) of the Food Safety Modernization Act (FSMA) and be given the guidance needed to implement the rule. It will ensure that growers are updated as the law evolves and is phased in; offer guidance to growers of options they may have; and serve as an information funnel for those looking for solutions to issues. AgMatters LLC will reach out to Specialty Crop growers and organizations, including those who have shown written support for this proposal, to offer workshops, talks, and one-on-one meetings in order to accomplish this goal.	\$42,050.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Maine Department of Agriculture, Conservation, and Forestry	\$639,624.67	3. Integrated Pest Management Education	<p>The Maine Landscape and Nursery Association (MELNA) will educate specialty crop consumers and home gardeners about Integrated Pest Management (IPM) with a marketing campaign that benefits specialty crop producers, wholesalers, and re-sellers large and small. MELNA is an association of independent garden centers, nurseries, landscape gardeners, and stakeholders, consisting of 363 members. MELNA is seeking funding for an awareness campaign to promote good gardening practices (specifically IPM) and minimize reliance on pesticides, targeting gardeners/homeowners. The average home gardener has no IPM training which often results in: 1) more pest control than needed, potentially causing environmental problems; 2) misperception that ALL synthetics are bad and all problems (at any scale) can be controlled without IPM; and 3) missed opportunities to take preventive/protective measures. This can lead to harmful, unnecessary legislation which can make IPM ineffective, causing specialty crop producers, and retailers to be less efficient, less profitable, and less likely to be sustainable into the future. UMaine Cooperative Extension works hard to educate and train but is not reaching people at retail locations and garden centers where consumers turn for advice. MELNA is perfectly positioned to use their proven marketing and communication delivery vehicle; “Plant Something! Plant Maine!”, to reach gardeners in Maine with the message that IPM offers a proven, science-based strategy for sustainable gardening.</p>	\$53,950.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Maine Department of Agriculture, Conservation, and Forestry	\$639,624.67	4. Plant Something at School - Year 2	<p>This is year two of a two-year grant awarded in 2018. The Maine Landscape and Nursery Association (MELNA) will team with the Maine School Garden Collaborative in “Plant Something at School”, a two-year, coordinated outreach program to Maine’s PK-12 students in support of Maine’s Nursery and Landscape Specialty Crop Industry. The Maine School Garden Collaborative (MSGC), a group of four partners, consists of Maine Agriculture in the Classroom (MAITC), ReTreeUS, Maine School Garden Network (MSGN), and MELNA. This project was developed as an offshoot of MELNA’s successful Plant Something! Plant ME! (PSPME!) marketing effort supported by SCBGP in previous years and will include new resources for school gardens, newly planted school orchards, and the publishing of a new children’s book. MELNA, as the lead for this project in the School Garden Collaborative, will bring agriculture education and promotion to tens of thousands of students and their families. This education and promotion will bring specialty crop fruit and vegetable production practices to schools including integrated pest management to generate school grown produce that can be displayed at regional fairs throughout Maine. MSGN and ReTreeUS will be working directly with teachers and students in schools, MAITC will facilitate development of curricula and educational materials, while MELNA will oversee and promote the project. Through this collaboration we will promote the production and consumption of healthy, nutritional specialty crops while growing the next generation of consumers, employees, owners, and supporters of the industry.</p>	\$54,738.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Maine Department of Agriculture, Conservation, and Forestry	\$639,624.67	5. Increasing Maine's Maple Market Share - Year 2	In order to expand the market for maple syrup products, the Maine Maple Producers Association (MMPA) will establish an agreement with the Maine Department of Agriculture, Conservation, and Forestry to execute a professionally designed and executed marketing plan that will promote the growing state maple industry and increase retail sales by at least 10 percent. This will increase jobs, retail business opportunities and the profitability of Maine's maple economy and the people employed directly and indirectly in the industry. Actions for increasing market share include: hiring a professional agency to conduct a monthly marketing strategy on behalf of producers, hiring a professional photographer to create a photo library of Maine maple related pictures, and developing high quality recipe cards for MMPA's promotional use as handouts and to use for social media outreach.	\$40,260.00
Maine Department of Agriculture, Conservation, and Forestry	\$639,624.67	6. Evaluating No-Till Production Practices in Potato Cropping Systems	The Maine Potato Board will investigate the potential economic and environmental benefits as well as the challenges of adopting and implementing no-till production practices during the non-potato years of the crop rotation by managing a series of on- farm demonstration trials evaluating cash and cover crops.	\$87,714.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Maine Department of Agriculture, Conservation, and Forestry	\$639,624.67	7. New methods of improving wild blueberry production with IPM for diseases	This University of Maine project, supported by the Wild Blueberry Commission of Maine (WBCM), will develop new methods of pathogen detection and control and implement those methods in an Integrated Pest Management program for diseases. There are 510 wild blueberry growers in Maine managing 44,000 commercial acres. This project would prevent an estimated \$33 million in annual grower losses due to diseases. Over the past few years, wild blueberry growers have consistently ranked controlling diseases as one of their top concerns for sustaining crop production and yield. With more growers interested in fresh pack and organic production, lesser-known diseases are now having an impact on production, and new methods of control need to be developed. This project will: 1) evaluate the best timing for control of Exobasidium fruit spot; 2) evaluate the best timing of new fungicides, particularly organic materials, for control of mummy berry and leaf spots; 3) test new DNA-based methodologies for detecting pathogen spores to determine correct timing of fungicide applications; and 4) use weather station network data and applied research to provide growers with disease forecasts for mummy berry and Botrytis blight. Correct timing of fungicides reduces crop loss, is cost effective, and can decrease the impact to the environment. This program will also educate growers on fungicide rotation to decrease the risk of fungicide resistance. Growers will be surveyed at educational sessions to determine understanding and adoption of the disease management strategies evaluated in this program	\$86,354.00
Maine Department of Agriculture, Conservation, and Forestry	\$639,624.67	8. Expanding Maines's Berry Industry	The University of Maine will establish scientifically designed trials of strawberries, raspberries, and highbush blueberries at the Maine Agriculture Experiment Station in Monmouth to determine the adaptability of new varieties from breeding programs both national and international, which will generate critical information needed to select the best performing plants for Maine growing conditioning and could result in significant improvements in current fruit quality and yield standards. This will allow Maine farmers to successfully expand fresh berry production and meet the growing demand for locally produced fruit.	\$19,666.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Maine Department of Agriculture, Conservation, and Forestry	\$639,624.67	9. Effects of Fertilizer and Temperature on Wild Blueberry Pests, Yield, and Quality	On behalf of the wild blueberry growers in Maine, the University of Maine proposes a project to extend the current SCBGP funded project to study the Effects of Fertilizer and Temperature on Wild Blueberry Pests, Yield, and Quality (this is a continuation of the SCBGP project from 2018). The project has accomplished the task to evaluate new fertilizers advertised to wild blueberry growers for their efficacy and impact on pests in the prune (vegetative growth) year. We also began the process of evaluating blueberry growth under increased temperatures that mimic climate change. Both organic and conventional fertilizers were applied to prune year plots, and now we must measure the true impact of these new fertilizers and warmer temperatures on blueberry growth, yield, quality, and pests in the crop year. The new proposal aims to: 1) study the effect of new fertilizers on wild blueberry crop year pests, yield, and quality; 2) assess the impact of warmer temperatures on wild blueberry pests, yield, and quality in the crop year; and 3) disseminate the results to growers, processors, and stakeholders. We will provide revised guidelines for the timing of fertilizer and pesticide applications. Wild blueberry remains a culturally and economically important crop for Maine as a \$128 million industry fueled by 510 growers covering 40,000 commercial acres. Without continued block grant support, blueberry plants and pests will shift their timing without farmers being aware. It is essential that we monitor this shift in plant and pest development in addition to this crop's response to new fertilizers for the success of Maine wild blueberry farmers.	\$89,314.00
Maine Department of Agriculture, Conservation, and Forestry	\$639,624.67	10. Pilot to encourage GAP/GHP certification for growers of eligible specialty crops in Maine	The Division of Quality Assurance and Regulations (QAR), Department of Agriculture, Conservation, and Forestry, will administer a pilot project aimed at opening marketing opportunities for Maine produce growers. This program will reimburse growers for 50 percent of the cost of an initial Good Agricultural Practices/Good Handling Practices (GAP/GHP) Audit up to \$500. QAR staff perform the audits under the auspices of the Food and Drug Administration; QAR will verify audit costs and process requests for reimbursement.	\$20,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Maine Department of Agriculture, Conservation, and Forestry	\$639,624.67	11. Enhancing Competitiveness of the Potato Specialty Crop through More Sustainable, Diverse and Resilient Cropping Systems	The University of Maine at Presque Isle will conduct a pilot study to potentially increase the efficiency and profitability of potato production by evaluating optimal varieties and processes for rotational crops using a greenhouse study, conducted by students, with results shared via workshops for growers.	\$12,233.00
Maine Department of Agriculture, Conservation, and Forestry	\$639,624.67	12. Promoting awareness of key Maine specialty crops through video to increase sales	In order to promote the sale of Maine specialty crop fruits and vegetables both within Maine and across the region, the Maine Department of Agriculture, Conservation, and Forestry will work with a professional marketing firm to create a series of educational videos and public service announcements for use on television and social media. The series will educate consumers about what specialty crops are grown in Maine, where to purchase them, and the value of selecting locally grown. The project will benefit the small growers who raise a variety of crops, and we'll work to ensure it supports the messaging of the larger grower/producer groups. The one-year project will include planning the campaign, taping and editing the video, and planning and implementing a social media campaign. (Television-ready video will be prepared but may not be implemented by the end of this grant period.)	\$58,815.63
Maine Department of Agriculture, Conservation, and Forestry	\$639,624.67	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$47,367.57
Maryland Department of Agriculture	\$504,843.09	1. Increasing Maryland Apple and Honey Industry Visibility and Profitability	Grow and Fortify will increase the visibility and profitability of Maryland grown apples and honey by developing a marketing and promotion plan that supports the apple and honey specialty crops, and the larger industries that are dependent on these ingredients.	\$25,861.25

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Maryland Department of Agriculture	\$504,843.09	2. Specialty crop coverage in Maryland Public Television's Maryland Farm & Harvest	Maryland Public Television and its co-producer Maryland Department of Agriculture will include segments on specialty crops in Season 7 of Maryland Farm & Harvest. These segments will explain the production of specialty crops, introduce Maryland citizens to farmers who grow specialty crops and provide recipes for specialty crops. The segments will be in ten episodes; total gross viewership for the first six seasons is 7,382,616 (viewership only). The episodes are available online and can be streamed through Roku, Apple TV, DVD's are provided to all Maryland libraries (for free) as well as all public and home-schooled students via MPT's educational arm Thinkport. Maryland Farm & Harvest will increase awareness and demand for Maryland specialty crops.	\$35,000.00
Maryland Department of Agriculture	\$504,843.09	3. Produce Safety GAP/GHP Programs to provide Market Access and FSMA Produce Safety Rule Compliance	The Maryland Department of Agriculture Food Quality Assurance Program, the University of Maryland Plant Sciences and Landscape Architecture Department, University of Maryland Extension and the University of Maryland Agricultural Law Education Initiative will partner to provide coordinated food safety programs to assist specialty crop producers in complying with the FDA Food Safety Modernization Act's Produce Safety Rule and maintaining and gaining market access. Programs will include formal and informal training, certification of compliance with food safety practices, food safety technical assistance, verification of food safety practices effectiveness and cost share funds to assist with the implementation of effective food safety plans and practices.	\$122,861.63

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Maryland Department of Agriculture	\$504,843.09	4. Maryland's Best: Increasing Market Share and Consumer Demand for Maryland Specialty Crops	This project aims to increase sales and consumer demand for Maryland grown specialty crops through targeted advertising, strategic consumer and wholesale promotions, networking events, a farm to school pilot project with Baltimore City, and direct partnerships with Maryland specialty crop producer associations. Previous Maryland's Best promotions funded by the Specialty Crop Block Grant Program have increased sales of Maryland specialty crops by millions of dollars. Maryland's Best assets such as the web site www.marylandsbest.net, Maryland's Best brand awareness and preference, producer and buyers contacts, the Maryland Department of Agriculture's Communications Office and established events will be leveraged to ensure that the proposed funds will achieve a maximum return on investment.	\$133,817.28
Maryland Department of Agriculture	\$504,843.09	5. Food Safety & Traceability	NetGlo will enhance Maryland specialty crop producers and processors ability to meet regulatory and buyer food safety requirements by demonstrating the use of an automated lot tracking system (including Blockchain) and disseminating feedback to Maryland stakeholders.	\$27,000.00
Maryland Department of Agriculture	\$504,843.09	6. Legal Guide to Direct Farm Marketing for Maryland Produce Growers	According to the last Census of Agriculture, Maryland farmers sold upward of \$28 million worth of produce directly to consumers, and demand for farm-to-consumer produce continues to increase. Although direct marketing of produce is popular, it is not without its legal risks. No single source exists of the legal information Maryland farmers should be aware of when engaging in direct marketing. To fill this gap, the Agriculture Law Education Initiative (ALEI) proposes to develop the Legal Guide to Direct Farm Marketing for Maryland Produce Growers. This resource will outline the legal aspects of direct marketing, including, but not limited to, contractual considerations, product liability and business and labor laws. The Guide will equip farmers with the knowledge they need to effectively manage the legal risks involved with direct marketing and empower them to strengthen and expand their direct marketing efforts. The ALEI will partner with University of Maryland Extension (UME) and Maryland Vegetable Grower Association (MVGA) to present the Guide to specialty crop growers throughout the state.	\$32,860.79

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Maryland Department of Agriculture	\$504,843.09	7. Evaluating field effectiveness of miticides for managing the honey bee pest Varroa destructor in Maryland	University of Maryland's (UMD) Bee Lab will reduce the high rates of Varroa-induced honey bee colony losses suffered by Maryland's beekeepers. To achieve this end, UMD's Bee Lab will compare the effectiveness of major Varroa mite control products, identify optimal state Varroa management strategies and develop and deliver an extension program that encourages, and tracks beekeeper adoption of Maryland tested best practice recommendations.	\$48,508.65
Maryland Department of Agriculture	\$504,843.09	8. Managing <i>D. suzukii</i> and fungi in raspberries using peroxyacetic acid	The University of Maryland will evaluate the efficacy of crop sterilants for managing spotted-wing drosophila (SWD) and fruit rot fungi in Maryland raspberries. SWD is the most significant pest of soft-skinned fruit crops in the U.S., and lays eggs in ripening, marketable soft-skinned fruit. Currently, management relies heavily on broad spectrum insecticides and numerous applications are necessary to achieve adequate control. In addition to the direct damage caused by SWD, the wounds SWD creates can increase the risk of fruit rot infection. Fruit rots also cause serious yield loss in small fruit production. Approaches that integrate insect and pathogen management can more effectively and efficiently manage fruit pests, and recent research has suggested that a crop sterilant may reduce SWD incidence as well as manage fruit rots in blueberries. However, how this product impacts SWD (efficacy results have varied) and whether it will work in raspberries remain unknown. Therefore, the University of Maryland will perform field trials in raspberries that compare the crop sterilant to an unsprayed control and measure effects on the fungal community, SWD infestation, and fruit rot incidence. Further, we will be comparing growers' standard applications (e.g. pyrethroids and other insecticides) with applications that include a crop sterilant on-farm to evaluate control of SWD and fruit rot fungi. Data will be used to recommend alternative management strategies for growers through winter extension presentations, summer field days, and extension articles.	\$26,472.40
Maryland Department of Agriculture	\$504,843.09	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$52,381.05

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Massachusetts Department of Agricultural Resources	\$426,834.86	1. Connecting beekeepers with veterinarians in order to improve disease management and educational infrastructure for honey producers in Massachusetts	University of Massachusetts- Amherst will lead this project to enhance the infrastructure to support Massachusetts honey producers by providing the following efforts: 1) form a steering committee to create protocols and an explanatory video for vet-beekeeper interactions; 2) host a hive health workshop for certified veterinarians, and 3) design a set of 10 graphical fact sheets with clear and concise information about hive health for beekeepers and veterinarians. These efforts are developed based on the areas of need that have been identified through previous surveys and conversations with stakeholders that will improve the sustainability and profitability of honey production in Massachusetts.	\$39,123.00
Massachusetts Department of Agricultural Resources	\$426,834.86	2. Learn to Love Local Food Education Program	Coastal Foodshed will lead this project to implement a robust Local Food Education Program, Learn to Love Local, by delivering 125 cooking demonstrations and tastings to over 2,000 people in New Bedford, one of the highest need communities in the state. These educational events will focus on seasonal, locally-sourced produce available at our Farmers Markets, Mobile Farm Stand sites, and pop-up community events with the desire to increase access to, sales and consumption of MA specialty crops.	\$54,706.88
Massachusetts Department of Agricultural Resources	\$426,834.86	3. Practical Approaches to Urban Soils Health & Remediation	Massachusetts Chapter of the Northeast Organic Farming Association (NOFA/Mass) will lead this project to educate people about different bioremediation techniques by working with two different approaches designed by bioremediation experts and track outcomes. NOFA/Mass, partnering with two urban community garden associations (Worcester Regional Environmental Council and Gardening the Community in Springfield), will work closely with the youth program with each of these two associations to conduct on-farm trials of bioremediation techniques with heavy metal contamination and/or hydrocarbon pollutants to educate urban growers about remediation methods and healthy soils practices. The project also will test strategies to address remediation of soils with an aim to make them viable for healthy vegetable production without resorting to cap-and-fill methods.	\$63,917.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Massachusetts Department of Agricultural Resources	\$426,834.86	4. Scaling Up Specialty Crop Business Program	Sustainable Business Network of Massachusetts (SBN) will lead this project aiming to overcome barriers to specialty crop integration by bolstering the demand for local specialty crop products and supporting the overall profitability, variability, and sustainability of specialty crop producers. Based on the success of previous efforts, this program will facilitate the establishment of new business partnerships between local specialty crop growers and buyers through a year-long program including a Specialty Crop Trade Show; year-long programming for wholesale buyers of different categories (includes in-person meetings), conference calls, and a panel discussion. The program also will enhance specialty crop growers' competitiveness by providing quality educational programming and technical knowledge supports.	\$48,502.40
Massachusetts Department of Agricultural Resources	\$426,834.86	5. Risky business? Conducting a risk assessment of postharvest operations using washing machines for leafy greens	The University of Massachusetts will lead this project to investigate the risk of microbial cross contamination due to small scale postharvest processing practices by developing a scientifically-based assessment of postharvest practices to identify risks; determine practical, easily-implemented measures for small scale production operations. The objectives of this project are to: 1) identify, source and build converted washing machines for drying leafy greens using the "DIY" resources; 2) conduct a science-based risk hazard identification assessment that will investigate the harborage and sanitation risks of using DIY converted washing machines for drying leafy greens; and 3) develop and design a mixed-media portfolio of extension-based tools to disseminate results to stakeholders.	\$71,294.28
Massachusetts Department of Agricultural Resources	\$426,834.86	6. Establishing a Massachusetts Cranberry Bog Tour Program	The Cape Cod Cranberry Growers' Association will lead this project to develop a self-sustaining cranberry bog tour program to further educate the general public on the Massachusetts cranberry industry and simultaneously provide a farm diversification option for cranberry growers. The objectives of this project are to: 1) provide an educational outlet for the public looking to visit a cranberry bog; 2) Establish a sustainable income opportunity for cranberry growers looking to diversify their farming operation; 3) increase the interest of cranberry growers for participating in ag-tourism; and 4) create, promote and manage a self-sustaining cranberry bog tour program.	\$77,672.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Massachusetts Department of Agricultural Resources	\$426,834.86	8. Groundwork Lawrence Cooking Class Participant Expansion: Increasing Local Nutrition and Sustaining Specialty Crop Consumption	Groundwork Lawrence (GWL) will lead this project to promote the purchase and utilization of specialty crops and create a healthier Lawrence by increasing the number of people who are able to attend GWL healthy cooking classes each year. The objectives of the project are to increase specialty crop consumption and purchase and to improve public health within Lawrence, Massachusetts. Despite the availability of produce, 45 percent of Lawrence youth are still overweight or obese, and 68 percent of adults in Methuen and Lawrence have four or more chronic diet-related diseases. In order to alleviate these health-related inequities and to sustain a continued interest in the purchase of specialty crops, this project aims to provide a shift in approach to engage more community members to increase specialty crop use in their everyday lives.	\$37,411.60
Massachusetts Department of Agricultural Resources	\$426,834.86	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding	\$34,141.49
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	1. International and Domestic Promotion of Michigan Specialty Crops	The Michigan Department of Agriculture & Rural Development's (MDARD) International Marketing Program will continue to work collaboratively with the Cherry Marketing Institute, Michigan Bean Commission, Michigan Apple Committee, and the Michigan Potato Industry Commission to promote specialty crop products both domestically and internationally. The project will allow Michigan specialty crop companies and commodity groups the ability to exhibit at domestic and international trade shows and the ability to bring international buyers to Michigan as part of a buyers' mission for specialty crops. Connecting the Michigan specialty crop industry with potential buyers is critical for the expansion of sales both domestically and internationally, especially, as production continues to increase. The International Marketing Program will work to secure booth space at the trade shows and organize the specialty crop exhibitors for each of the shows. Additionally, the International Marketing Program will collaboratively work with the specialty crop commodity groups to provide grants to bring international buyers to Michigan with the goal of increasing purchases of Michigan specialty crops.	\$148,108.01

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	2. Improving Strategies to Limit Root Rots for Michigan Asparagus	The Michigan Asparagus Advisory Board will be responsible for this project. The overarching goal of this project is the development of integrated soilborne disease management and extension programming for Michigan asparagus production. The overall goal of this project is the development of integrated soilborne disease management and extension programming for Michigan asparagus production. The general tasks to be completed are to: 1) evaluate the efficacy of soilborne disease management strategies for Fusarium spp. and Phytophthora spp. in asparagus; 2) determine the efficacy of pre-plant fumigation programs for soilborne disease management of Fusarium spp. and Phytophthora spp. in asparagus; and 3) disseminate research findings and develop and deliver extension programming focused on soilborne disease management recommendations to Michigan asparagus growers and stakeholders.	\$80,566.00
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	3. Risk Prediction to Improve IPM Programs for Spotted Wing Drosophila in Michigan Blueberries	The Michigan Blueberry Commission will lead this project to develop, validate, and disseminate a scientifically-based program for predicting the risk of fruit infestation by the invasive insect pest, spotted wing Drosophila (SWD). This will improve blueberry pest management programs and reduce dependence on insecticides. Michigan State University researchers will develop a decision system for growers to implement on their farms and will work with extension staff to disseminate information about the project to stakeholders through weekly scouting information, grower meetings, and field days. This project will combine information gained from recent analysis of how SWD are affected by winter conditions with the Enviroweather network of weather stations to develop pre-season risk assessment of expected SWD population levels. These assessments of infestation risk will be updated after the spring season, and then sampling of fruit across commercial blueberry farms during the summer will be used to better understand when and where risk of SWD infestation increases. This project will also optimize fruit sampling techniques for speed and cost effectiveness and will continue monitoring populations for insecticide resistance. Throughout the project, information will be shared with the Michigan blueberry industry through workshops, educational meetings, and weekly summer pest reports. This project will increase grower confidence in their	\$99,991.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			management programs for SWD and will lead to reduced dependence on insecticides for managing this pest.	

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	4. Implementation of Precision Decision Support Systems to Protect and Optimize Michigan Tree Fruit Production	The Michigan Apple Association, in partnership with Michigan State University's AgBioResearch horticultural scientists and Extension educators, has established a network of well-equipped labs and trained personnel for assessing winter cold hardiness, plant dormancy, and spring crop loads across the state's major tree fruit production regions. Data from these networks will be used to develop and refine plant response models and precision decision support systems for growers to better implement orchard measures that: 1) reduce the risk for low temperature crop damage in winter and spring, and 2) improve spring crop load management procedures to optimize yields and fruit quality. Cold hardiness and crop load assessment technologies will be utilized by a team of MSU Extension educators and grower-cooperators located in the Southwest, Grand Rapids, West-Central, and Northwest Michigan tree fruit-growing regions for weekly-to-biweekly sampling of apple, tart and sweet cherry, and peach orchards to track changes in plant dormancy and flower bud cold hardiness from fall through bloom. In spring, assessments will shift to record and analyze subsequent initial fruit growth rates to more precisely predict fruit set for implementation of early crop load management strategies that are key to improving labor efficiency and achieving targeted yields and fruit quality for optimization of market returns and consumer satisfaction.	\$99,119.00
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	5. Developing a Risk Model for Managing Spotted Wing Drosophila in Tart Cherry	Michigan State University (MSU) will help cherry growers better manage spotted wing drosophila (SWD) by developing a risk model using environmental, physiological, phenological, and rain fast data. MSU will disseminate results to stakeholders through both print materials and face to face meetings. Spotted wing drosophila has become the number one pest management priority for the tart cherry industry. This funding will build upon previous efforts to develop precise and efficacious management strategies that are economically and environmentally sustainable.	\$99,992.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	7. Elevating the Profile/Profitability of Michigan Cherries: Digitally, Regionally, and Nationally	The Michigan Cherry Committee (MCC) will promote increased awareness, consumption, and sales of one of the state’s primary specialty crops cherries—to regional, national, and international audiences via three strategic marketing strategies, comprising several broad campaigns encompassing both sweet and tart Michigan cherries in multiple product forms. Taken together, these efforts will target both industry-facing (food, beverage, and restaurant professionals, with high-volume purchasing power and influence in their field) and consumer facing audiences. The three strategies that MCC will use are to:1) work with mPerks, a popular grocery rewards program; 2) partner with YouTube influencers to produce new recipes and digital video content featuring this Michigan specialty crop; and 3) produce underwriting advertising for the Heritage Radio Network (HRN), “the country’s leading food radio station,” which hosts 35 weekly live shows and podcasts to listeners in over 150 countries.	\$81,000.00
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	8. Leaf Blight Decreases Michigan Onion Yields and May Increase Bulb Rot: New Approaches Are Needed	Leaf blight, caused by <i>Stemphylium vesicarium</i> , has emerged as a critical issue for Michigan onion producers. In 2017 and 2018, onion growers struggled to control this disease despite close adherence to management recommendations. Recent field trials show that strobilurin fungicides, which had been a cornerstone of fungicide control programs, are no longer working. The finding that this important group of fungicides is not able to protect the onion foliage leaves the industry vulnerable to destructive leaf blight. Only a few newer fungicides are effective but cost-prohibitive. In addition, these high-cost fungicides can only be used two to three times (per the label) over the course of the relatively long growing season. Growers are concerned that severe foliar blight in the field results in increased bacterial bulb rot during storage. In this proposal, the Michigan Onion Committee aims to mitigate the impact of <i>Stemphylium</i> leaf blight by determining whether <i>Stemphylium</i> leaf blight renders the bulb more susceptible to bacterial bulb rot and developing strategies that maximize fungicide.	\$82,721.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	9. MWC Will Advance Michigan Wine through Activities Contributing to Market Expansion, Access, and Workforce Development	The Michigan Wine Collaborative (MWC) was formed in 2016 with a mission to “enhance the sustainability and profitability of the Michigan wine industry by supporting wineries, growers and other businesses and individuals connected to the industry – today and for future generations”. Contracting with project director, Emily Dockery, viticulturist and experienced wine professional, MWC will execute the following objectives aimed at effectively absorbing the Michigan Grape and Wine Council, expanding the Michigan wine market, strengthening industry partnerships and training hospitality workforce. The following objectives of this project will increase the market visibility, competitiveness and sustainability of the Michigan grape and wine industry: 1) launching Coravin Wine Program to strengthen restaurant and community commitment to serving Michigan wines; 2) establishing a bi-annual MiCAST training event that will provide hospitality partners with workforce development; 3) developing new events to bring consumer and national industry attention to Michigan wines; and 4) registering, representing and promoting Michigan wines at critical industry events.	\$100,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	10. Developing Cultural Practices to Manage Critical Pests in Carrots	Michigan State University (MSU) will evaluate and deliver cultural strategies to control critical pests in carrot production. Critical carrot pests include the major plant-parasitic nematodes root lesion (<i>Pratylenchus penetrans</i>) and Northern root knot (<i>Meloidogyne hapla</i>), as well as common weeds including Powell amaranth (<i>Amaranthus powellii</i>). Current management of these pests relies heavily on a single pesticide – vydate for nematodes and Lorax for weeds – whose continued use is threatened both by increased regulation and development of resistance among key pests. MSU proposes to develop preventative and cultural management practices, including cover cropping, stale seed bedding, and use of competitive carrot cultivars to reduce reliance on these products. The impact of these practices on soil biology and health will be evaluated using a combination of traditional soil chemical and physical tests and nematode community indices. Development of cultural pest management strategies that leverage the soil health benefits of these techniques are expected to improve the profitability of carrot growers by reducing chemical costs, sustaining environmental quality, and enhancing the quality of life for carrot growers by reducing the reliance on chemical products.	\$99,382.00
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	11. Accelerated Cultivar and Rootstock for the Michigan Peach Industry	The Michigan Peach Sponsors, a non-profit grower organization, will partner with Michigan State University (MSU) to accelerate cooperative grower trials to test elite peach breeding lines from MSU for the fresh market and from Ontario for the processing peach market. These selections have improved disease resistance and fruit characteristics compared to standard varieties. Selections from these two programs will be propagated on a range of rootstock types to demonstrate compatibility, and then established in grower site trials monitored by MSU researchers. Grower-cooperator tests will provide performance data, stimulate grower interest, and encourage the nursery industry to add them to their inventory. MSU selections will be virus tested and heat treated, which are processes critical prior to wide scale propagation for commercial production. Adoption of these new varieties suited for the Michigan growing conditions by the Michigan fresh and processing peach growers will help Michigan growers to remain competitive in the national marketplace.	\$55,940.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	12. Sustainable Management of Potato Early Die Complex with Custom Compost Blends	Michigan State University will develop, evaluate, and deliver compost blends utilizing biological control agents for suppression of the potato early die complex, which includes the major potato pests <i>Verticillium dahliae</i> and root lesion nematodes (<i>Pratylenchus penetrans</i>). Soil-based management practices will be developed for potato early die complex with the goal of providing an alternative to soil fumigation. The impact of these practices on soil biology and health will be evaluated using a combination of traditional soil chemical and physical tests and nematode community indices. Development of soil-based pest management strategies that leverage the soil health benefits of compost are expected to improve the profitability of potato growers by reducing chemical costs, sustaining environmental quality, and enhancing the quality of life for potato growers and agricultural workers by reducing the use of soil fumigation.	\$97,967.00
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	13. Small Fruit and Hops Acreage Inventory and Labor Survey	The Michigan State Horticultural Society, the state's largest fruit grower organization, representing over 1500 Michigan fruit growers, will be the primary organization carrying out the reporting requirements of this project. The project goal is to conduct a fruit acreage inventory survey of brambles, cranberries, grapes, strawberries, and saskatoons as well as include hops. This survey will complete a data collection on all major fruit acres being grown in Michigan, which was started with the 2018/2019 survey of tree fruit and blueberries. Hops are being included in this survey because they do not have a natural home with either fruit or vegetables, but as a large and growing segment of Michigan agriculture, it is necessary to know their status. Data will be disseminated to Michigan State Horticultural Society members and partners in the industry, including Michigan Farm Bureau. This will allow the fruit industry and policy makers to make sound business, marketing and policy decisions and improve the position and competitiveness of Michigan's fruit industry in both national and global markets. The fruit industry as a whole is a major component of Michigan's economy with an estimated annual farm gate value well over \$500 million. The survey will be conducted by the USDA-NASS Great Lakes Regional Office. NASS is the recognized collector and provider of valid, third-party agricultural information and data for the U.S. agricultural industry. The industry believes the information	\$75,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			changes, often annual, warranting data collection on acreage on a three to five-year rotational basis.	

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	14. Cultural Techniques for Improving Mid-Summer Leafing and Heading Brassica Crop Yields	Based at Forgotten Harvest Farm (FH Farm), this project will be led by Forgotten Harvest, working with Michigan State University Extension (MSU-E), to research and supply the Specialty Crop industry with information about the effectiveness of various leafing and heading Brassica crop planting techniques applied during the mid-summer growing seasons. Treatments will include planting on a) bio-degradable black plastic mulch, b) bio-degradable white plastic mulch, c) conventional white plastic mulch, d) strip-tilled rolled rye mulch, and e) bare soil. The project's hypotheses are that: 1) use of white plastic mulch will reduce crop mortality and yield loss associated with heat generated by black plastic mulch; 2) yield of corps on the white plastic mulch and rye mulch will be greater than the other treatments; and 3) yields will be similar between the conventional and bio-degradable white plastic mulches. During and after crop harvest and data collection, the information gathered will be analyzed and disseminated to Specialty Crop growers through Extension publications with plans to publish the results and participate in specialty crop and vegetable grower working groups, seminars, and conferences after the 2019 growing season and project conclusion.	\$17,503.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	15. Market Enhancement to the Traverse Wine Coast Region	The Traverse Wine Coast (TWC) is a distinguishable brand, created by the collaborative effort of 35 member-wineries. TWC is made up of two peninsulas boasting 105 miles of beautiful coastline surrounded by the protective waters of Lake Michigan. This unique climate provides warm days and cool autumn nights, allowing fruit to ripen optimally. TWC produces exceptionally well-balanced white and red wines that are fruit-forward, crisp, clean with bright finishes which pair perfectly with foods of all styles. The major outcomes of the project are: 1) to achieve economic growth due to an expanded, sustainable and effective brand of the Traverse City area wineries; 2) to raise the ethos of the region to cohesively drive traffic from beyond the Grand Traverse region so that all wineries, large and small, can benefit from increased traffic; 3) to provide sustainability to growers, large and small, that are providing agriculture for the region's wine production; and 4) to establish to the customer that the region is a premier wine region. The general task of the project is the integration of a comprehensive marketing strategy that is a scientific and ongoing process that will make the TWC brand stronger in a measurable way.	\$75,500.00
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	16. Influence and Ibotta: Getting Michigan Cherries a Slice of the Digital Pie with Rebates and Reach	The Cherry Marketing Institute (CMI) will promote increased awareness, consumption, and sales of one of the state's primary specialty crops—cherries—to a national audience via the content inspired by prominent food, beverage, and health-and-wellness influencers tour to northern Michigan during the height of harvest. Dovetailing with this effort, CMI will further entice consumers towards greater consumption (some 15,116 frozen cherry pies, to be exact, at minimum) via Ibotta, one of the top mobile apps used in the United States.	\$91,478.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	17. Verification of Proposed Fertilizer Recommendations for Michigan Dry Bean Growers: Enhancing Economic and Environmental Sustainability	<p>The Michigan Bean Commission (MBC), which has demonstrated commitment to sound economic development and environmental stewardship of dry bean production in Michigan, will manage this project. The primary growing region of dry beans is directly adjacent to the Saginaw Bay and Great Lakes watershed (80 percent of Michigan beans are grown within Bay, Huron, Saginaw and Tuscola counties). Improvements in fertilizer management within this highly concentrated land space will have significant impact on environmental quality in the Great Lakes watershed. This project is designed to verify proposed nutrient recommendations to ensure optimal soil fertility required for enhanced crop productivity. Current dry bean fertilizer application recommendations were established in the 1970-80's. The application rates have recently been reassessed through a comprehensive study. These recommendations are vitally important due to major agronomic and varietal changes across the Michigan dry bean growing region. Fertilizer recommendations specific for optimized bean growth must include the traditional macro nutrients (Nitrogen, Phosphorus and Potassium) and micronutrients (Zinc and Manganese). This knowledge will facilitate efficient and precise fertilizer use and overall soil nutrient management. This project will require use of both plot trials located the SVREC research farm and replicated grower strip trials. Project objectives include establishing and verifying revised rate recommendations that reflect the optimum plant nutrient uptake over very diverse growing conditions to boost crop yields and improve environmental stewardship and economic sustainability. Grower education will occur to assure adoption and industry wide implementation.</p>	\$99,959.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	18. Developing integrated field and post-harvest pest management strategies to advance chestnut quality and market expansion.	The Midwest Nut Producers Council (MNPC) and the Michigan State University (MSU) chestnut research team will collaborate to identify and address the causes of internal nut disorders, specifically rot pathogens and weevil larvae. These disorders affect chestnut quality, consumer confidence and marketable yield of Michigan chestnuts. Researchers will: 1) identify and study key pathogens and insects causing nut disorders; 2) develop pre-harvest management strategies; 3) develop post-harvest treatment options; and 4) disseminate results and recommendations to growers and processors. Management strategies may include horticultural practices, pesticide application, and pre-or post-harvest heat treatment. Integrating these activities will link researchers, extension educators and commercial growers, ensure resources are used efficiently, and generate practical and economically viable pest management options. Results will improve chestnut quality, increase marketable yields, and support sustainable chestnut production in Michigan. This work will advance the entire Michigan chestnut industry, protecting current grower investments along with future grower returns. Results will be disseminated to growers via joint MSU, MSU Extension and MNPC programming and publications.	\$97,495.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	19. Expanding Consumer Awareness and Consumption of Michigan Potatoes	<p>The Michigan Potato Industry Commission (MPIC) is seeking to assist growers of table stock potatoes (red-flesh, yellow-flesh, russet, round white potatoes, and other novelty varieties) with specific consumer-based marketing trends and messaging for Michigan potatoes. This project will focus on the expansion of consumer-focused messaging and branding materials to assist Michigan based growers of fresh potatoes in marketing their potatoes to consumers in the Great Lake's region, specifically targeting Michigan. During focus groups conducted in the fall of 2017 in metro Detroit, Grand Rapids, and Chicago; consumers expressed great interest in Michigan potatoes and their potential to know more and support their local economy through purchases. While some suggest that they solely shop for convenience, the overarching consensus presumes that area consumers are dedicated and willing to alter their shopping habits and increase their attention to detail in response to simply being made more aware of the Michigan potatoes brand and how it helps support local farmers. By strategically prompting consumers with emotional, informational, and social incentives to participate in acts of support, it is believed that consumers will gain a stronger relationship with the Michigan potatoes brand and begin actively selecting products based on familiarity and consciousness. In addition, the arrival of unique digital platforms and avenues for communication will be collectively advantageous in providing consumers with the information and the emotional response needed to consistently make the desired purchasing decisions.</p>	\$45,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	20. Increase awareness, sales and sustainability of our region by implementing an Interactive Vineyard Experience.	The Petoskey Wine Region (formerly the Bay View Wine Trail) is a nonprofit 501(c)6 established in 2014 and comprised of twelve wineries that reside within Michigan’s newest American Viticulture Area established in 2016 - “Tip of the Mitt”. This project expands on a Specialty Crop Block Grant awarded in 2018 to develop a Mobile App. Through this project, the Petoskey Wine Region will introduce an “Explore the Vineyards” Mobile App feature that will offer an experience similar to “Pokemon Go” where visitors look for plaque signs within the vineyard and the surrounding areas to earn badges and prizes when interacting with the App. This will be educational and something winery guests who are under 21 guests can participate in. The project aims to attract visitors that normally do not visit wineries. Studies have shown that consumers want interactive experiences when they visit wineries.	\$87,500.00
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	21. Building Trust and Increasing Sales of Michigan GROWN, Michigan GREAT Specialty Crops	The Michigan Ag Council (MAC) will work with a Michigan-based public relations agency to measure the sales of MAC partner specialty crops and leverage the findings to develop a multi-channel marketing strategy including in-store promotions, traveling exhibitions and social media/paid digital campaigns to increase consumer awareness and sales of Michigan GROWN, Michigan GREAT specialty crops – particularly as sales relate to trust in Michigan specialty crop farmers. Activations will include in-depth research and consumer trust engagement, retail partnerships with regular reporting, exhibits to influence specialty crop consumer spending behaviors, material distribution to share farmer stories and constant evaluation of messaging impact. By project-end, Michigan GROWN, Michigan GREAT will have increased sales of specialty crops and moved the needle toward consumer trust in farmers who grow and raise specialty crops in Michigan.	\$50,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	22. The Sagacious and Shrewd Weed Control Imperative for Herbaceous Perennials	The Michigan Nursery and Landscape Association (MNLA) will create weed control programs for herbaceous perennial (HP) growers that are expedient to their current equipment and cultural practices. Previously funded Specialty Crop Block Grant Program projects have shown that HP growers were equipped to deal with liquid applications, on a large scale, but not granules. Further research is needed to find acceptable rates and tank mixes for weed control products is essential to their adoption. Plant biomasses from the untreated/controls compared to treated areas will be evaluated at the start and end of each study period and results will be disseminated to HP growers in Michigan.	\$75,000.00
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	23. Raising Awareness of Real Michigan Christmas Trees through Consumer Education and Promotion	The Michigan Christmas Tree Association will increase awareness and sales of Michigan grown Christmas trees by developing a marketing program that will educate consumers about the various species and benefits of buying a natural cut tree vs. an artificial tree. The marketing program will drive the target audiences to the association website, member farms and to special events throughout Michigan.	\$75,000.00
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	24. Increasing Sales of Michigan Apples by Leveraging Online and Retail Outreach	In 2018, the Michigan Apple Committee (MAC) board approved its strategic plan for the period 2018 to 2023 and placed consumer awareness as one of its top three priorities. Significant emphasis was placed on strengthening consumer preference and increasing market penetration of Michigan Apples. MAC aims to increase sales of Michigan Apples by leveraging online and retail outreach efforts. This grant is a top priority for the Michigan Apple Committee. MAC proposes to spend \$100,000 on a consumer awareness campaign using online and print tactics as well as retail marketing outreach to educate consumers and increase demand for Michigan Apples. The project will build engagement with consumers and retailers to drive a deeper connection and awareness that will translate to increased apple movement in the retail marketplace.	\$100,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	\$2,208,795.00	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$174,772.78
Minnesota Department of Agriculture	\$1,366,227.46	1. Statewide Promotion of Minnesota Grown Specialty Crops	This project increases sales of MN specialty crops through statewide marketing, including sponsored search advertising (pay-per-click), promoted social media posts, and promotion of specific specialty crops in the printed Minnesota Grown Directory. MGPG's project improves the competitiveness of MN's specialty crop industry by addressing these SCGB and MDA funding priorities: 1) Improving operational efficiency, reducing costs, and increasing access to distribution systems and new markets for specialty crops, 2) Increasing the demand for locally produced specialty crops, and 3) Benefiting beginning and socially disadvantaged farmers We will address these goals through the following activities: 1) Build on our previous SCBG experience with sponsored search (pay-per-click) advertising and promoted social media posts to link consumers with growers via the online Minnesota Grown Directory. MDA staff create the sponsored search campaigns and monitor performance throughout the project. Sponsored search campaigns are conducted on all major search engines including Google, Yahoo, and Bing. Promoted social media posts are on the Minnesota Grown Facebook page which has over 31,700 followers. These activities deliver interested customers to the online Directory, which has 375,000 unique visitors annually. 2) Encourage increased purchases of specialty crops by highlighting them in the 2020 Minnesota Grown Directory. This will include eight pages of full color ads. These pages will include wineries, Christmas trees, apples, peppers, berries, honey, maple syrup, cut flowers, and pumpkins. MDA staff will provide ad design as well as distribution and promotion of the printed Directory. We anticipate distributing 155,000 copies statewide.	\$93,600.00
Minnesota Department of Agriculture	\$1,366,227.46	2. Expanding Hybrid Hazelnut Propagation Capacity	With this project, we will begin scale-up of the Upper Midwest hazelnut industry by expanding micropropagation capacity for our 1st Generation hybrid hazelnut selections to enable faster distribution of plants to growers.	\$21,519.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			<p>Specifically, the Regents of the University of Minnesota, Department of Agronomy and Plant Genetics will contract with two private micropropagation nurseries that have experience micro propagating European hazelnuts for development of propagation protocols for two selections of hybrid hazelnuts each. These cultivars were selected in the Upper Midwest specifically for Upper Midwest growers. Researchers at the University of Minnesota will send propagules (either juvenile spring shoots, or rooted mound layers) of top ranked hybrid hazelnut bushes from our breeding program to microplant and North American Plants in Oregon for them to establish in microculture. If they are successful, we will negotiate non-exclusive licenses with them to produce microplants that they will sell to nurseries in the Midwest to grow out to field-ready size to sell to hazelnut growers.</p>	
Minnesota Department of Agriculture	\$1,366,227.46	3. Integrated Pest Management for Local Hydroponic Vegetable Crop Industries	<p>This project will investigate fertility optimization, cultivar selection, and biocompatibility of insecticides with biological control to develop integrated pest management practices for local hydroponic and aquaponic vegetable crop industries. This project will be conducted by the University of Minnesota Department of Horticultural Science and includes two research objectives and two outreach/education objectives. For objective 1, we investigate the relationship between cultivar preference and fertility on aphid infestations in 'ponic' systems. For the objective 2, we will investigate the efficacy of organic approved biopesticides on aphids in 'ponics' systems, as well as biocompatibility of these products with commonly used biological control agents. Our grower collaborators will help select the cultivars and biopesticide products to test, based on their practical experience. For objective 3, we focus on outreach and dissemination of results in the form of a published IPM guide for the 'ponics' vegetable industry, grower presentations, and online resources. For objective 4, we will connect with Spark-Y Youth Action Labs, a local non-profit that focuses on youth empowerment through aquaponics systems in schools. We will work with Spark-Y to create demonstrations and curriculum that can be integrated into their pre-existing programs and teach youth about integrated pest management in these systems.</p>	\$95,298.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Minnesota Department of Agriculture	\$1,366,227.46	4. Expanding Farm to Institutional Sales: Moving Beyond Farm to School	<p>The Good Acre (TGA) food hub is partnering with the Central Corridor Anchor Partnership (CCAP), a collaboration of large higher ed and health care institutions along the 11-mile Green light-rail line in the Twin Cities, to develop ordering, inventory and distribution systems to expand farm to institution sales for the small-scale, beginning and underserved farmers that TGA supports. Ellen Watters, Co-project manager of CCAP and TGA Wholesale Manager will coordinate and facilitate strategy session meetings with the president or CEO of each participating CCAP anchor partner, food management company and distributor to identify challenges and develop strategies to address said challenges. In addition to securing new wholesale markets for the growers that sell into TGA, we are also applying for funding to help TGA growers improve record keeping and prepare for FSMA compliance. Through individualized on-farm technical assistance, TGA Grower Support Specialist, will work with growers on understanding how FSMA differs from GAP and how they can begin to prepare for this federal food safety regulation. TGA Grower Support Specialist will also help growers improve on-farm record keeping for GAP certification by inviting ten farms to test out COG Pro, an electronic recording keeping program that offers a dedicated section toward record keeping for GAP.</p>	\$98,050.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Minnesota Department of Agriculture	\$1,366,227.46	5. Resistant Plants as a Source of Novel Phytochemicals to Control Japanese Beetles on Specialty Crops	This project will determine the phytochemical differences between susceptible and resistant specialty crop cultivars and the correlation of metabolomic and genomic information to develop new control measures for Japanese beetle in specialty crops. Several research programs at the University of Minnesota have identified cultivars of birch, grapevine, raspberry, rose, apple and several species of Prunus that are susceptible or resistant to herbivory by invasive Japanese beetles (JB, Popillia japonica). We will compare the metabolic profiles of susceptible and resistant individuals of each of these species in order to identify extractable phytochemicals from resistant plants that may be applied externally to other plants as a naturally-derived, potentially organic, Japanese beetle repellent. We will also identify candidate genes associated with beetle resistance in rose and grapevine to inform future cultivar development and deployment. We also plan to engage the public, growers and academics with planned workshops, and presentations.	\$99,922.00
Minnesota Department of Agriculture	\$1,366,227.46	6. Market Opportunities for New Early Season Apple Varieties - Year 2 & 3	This project is being carried out internally by Minnesota Department of Agriculture (MDA) staff and directly addresses the MDA funding priority of "improving operational efficiency, reducing costs or other barriers, or increasing access to distribution systems and new markets for specialty crops". Minnesota apple growers are rapidly planting apple varieties that ripen between mid-August and early September. In addition to an earlier harvest date, these new varieties provide a vastly superior eating experience to traditional early season varieties suitable for Minnesota's climate. This project will accelerate market development for these locally grown apples through a multi-pronged approach including point-of-sale materials, social media and other digital marketing efforts, and a targeted public relations campaign to secure positive media attention via statewide mainstream media as well as non-traditional media such as bloggers.	\$84,169.33

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Minnesota Department of Agriculture	\$1,366,227.46	7. Unlocking Community Support to Drive Specialty Crop Sales through Farmers' Market Aggregation	<p>In 2017, with a Specialty Crop Block Grant, Renewing the Countryside and our partners launched the Farmers' Market Aggregation project with eight markets across the state to assist them in recruiting a broader pool of buyers for locally grown specialty crops. Market-run aggregation enterprises would facilitate sales to institutions, restaurants, groceries, and other local retailers, thus providing increased sales for farmers and increased local food access within communities. Having refined this model, where Farmers' Markets serve as Aggregation hubs for sales of specialty crops to wholesale markets, this phase of the project garners community support to drive sales to a level that ensures long-term success of the model. While we have made extensive progress in the sixteen months, we've been implementing this project, we're realizing that we need more time and resources to fully develop and evaluate this complex and innovative model. A third year of funding will enable us to grow sales through targeted PR and marketing efforts that will persuade people who live in these communities to purchase specialty crops through the businesses participating in the aggregation project (in addition to buying directly from farmers). This will help us determine what is required for an aggregation enterprise to achieve break-even sales and sustainability, which is crucial for determining if this is a model that can be broadly promoted as self-sustaining, or one that will require ongoing subsidies.</p>	\$99,909.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Minnesota Department of Agriculture	\$1,366,227.46	8. Evaluating a Tabletop System for Growing Local Strawberries	<p>The University of Minnesota (UMN) Department of Horticultural Science and West Central Research and Outreach Center (WCROC) are partnering with two beginning farmers to evaluate an innovative method of producing strawberries in a tabletop system. The project goal is to expand day neutral strawberry production in Minnesota by evaluating a tabletop system that increases labor efficiency, reduces inputs, and allows for crop production on marginal land. The outcome of this project is to enhance the competitiveness of specialty crops through greater capacity of sustainable practices of specialty crop production resulting in increased yield, reduced inputs, increased efficiency, increased economic return, and/or conservation of resources. Achievement of this outcome will be indicated by the number of growers/producers indicating adoption of recommended practices. We anticipate 200 farmers will learn about this project and gain the information needed to adopt the practice on their farms. Of these, 50 farmers will gain firsthand knowledge of the system through on-farm tours. To fulfill this goal, we will evaluate a tabletop strawberry system that has been widely adopted in Europe and Canada to determine its feasibility for use in Minnesota. We will educate stakeholders about the tabletop production method. Outreach will include field tours, presentations, online resources, and published reports for growers and researchers.</p>	\$97,031.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Minnesota Department of Agriculture	\$1,366,227.46	9. Evaluation of MN13142: An Advanced Breeding Clone with Long Dormancy and Other Desirable Traits	This project, by the Regents of the University of Minnesota, will improve potato production sustainability in the Midwest through development of a new clone with improved tuber quality, long-term storage and reduced chemical use. The clone will be evaluated for commercial production potential. With increasing concern over the use of chemicals in our food supply, it is imperative for the potato industry to identify/develop cultivars that can be stored with minimal or no chemical application. Use of pesticide CIPC as sprout inhibitor has been of great concern. The current proposal seeks to evaluate MN13142-32 for agronomic traits including plant stand, stems per seed, plant vigor, yield and yield attributes, dormancy length, and long-term storage evaluation. Susceptibility to diseases will also be monitored. The overall goal of this project is to collect data for potato variety protection (PVP) and assess the suitability of this promising clone for fast-track development and ultimately commercialization.	\$99,953.00
Minnesota Department of Agriculture	\$1,366,227.46	10. Preparing for Battle: Minnesota Apple Orchards vs. The Brown Marmorated Stink Bug	This project, by the Minnesota Department of Agriculture Plant Protection Division, seeks to expand monitoring of the brown marmorated stink bug within Minnesota apple orchards to identify emerging problem areas and lay the ground work for implementation of biological control. This project will assess the distribution of brown marmorated stink bug through monitoring and survey to inform growers and help mitigate loss. We will also survey at cooperating orchards for adventive populations of the samurai wasp, a known and successful parasitoid of BMSB. The MDA will work with growers to monitor for BMSB at high risk sites and to identify emerging problem areas and lay the ground work for implementation of biological control. Outcomes include: Enhancing the competitiveness of specialty crops through more sustainable, diverse, and resilient specialty crop systems. The sustainability and resilience of apples grown in Minnesota will be enhanced directly through this project and other specialty crops will be enhanced indirectly. Beneficiaries of the project include growers and consumers of apples produced at local orchards as well as other specialty crop systems such as community gardens and fresh market fruit and vegetable farms. By preventing losses in quality and quantity of apples caused by BMSB, the overall production and competitiveness of apples will be enhanced.	\$81,065.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Minnesota Department of Agriculture	\$1,366,227.46	11. Unlocking the Potential of Hop Genetic Resources for Developing Powdery Mildew Resistant Germplasm	The University of Minnesota will identify wild hop germplasm that confers field-level resistance to powdery mildew and enhanced agronomic potential. In addition, we will identify genetic markers associated with powdery mildew resistance for use in breeding. The project outcomes include the identification of wild hop accessions that exhibit field-level powdery mildew resistance and good agronomics, and genetic markers associated with powdery mildew resistance derived from the cultivar Zenith. These genomics tools and resources will be made available to hop breeders for continued improvement of hop germplasm. General tasks that will be completed to achieve the project goals include: (1) establishing a field trial of wild hop accessions and a biparental mapping population; (2) screening the wild hop accessions and biparental mapping population for powdery mildew resistance and agronomic traits; (3) generating marker data for the biparental population and using the combined genetic and phenotype data to identify markers associated with powdery mildew resistance; (4) communicating the results in peer reviewed journals, the annual American Hop Convention, and local hop grower and fruit and vegetable grower meetings; (5) assessing the knowledge gained by the growers at the growers meetings; and (5) providing germplasm and genetic markers to breeders for improving hop.	\$46,467.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Minnesota Department of Agriculture	\$1,366,227.46	12. Premium MN Garlic: Increasing Market Access, Supply Chain Networks, Improving Production, Phase II	Sustainable Farming Association will increase profitability of farmers and beginning farmers by increasing premium garlic production, training farmers on best garlic growing and marketing practices, expanding markets and supply chains, and researching improved cultivation methods. SFA will again partner with the Regional Sustainable Development Partnership and Dr. Carl Rosen to complete Phase II of the current project. We have found that Minnesota garlic production and marketing is small scale but has great potential for growth. AND farmer interest in garlic growing is much greater than we can meet in the first two years. Though SFA's 11 workshops and field days have increased the number of garlic growers and amount grown, interviews with chefs, distributors, groceries, and small food entrepreneurs reveal great interest in procuring local garlic, but a lack of consistent supply and volume to serve larger scale markets. This grant proposes to develop and implement a process that convenes growers to assess their production, distance to market and willingness and/or interest to develop value chains for Minnesota Premium Garlic. In addition, this grant aims to connect growers with market channels, including wholesalers, schools, restaurants and food processors to foster the investment and interest in sourcing and supporting local garlic production.	\$73,500.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Minnesota Department of Agriculture	\$1,366,227.46	13. Evaluating Minnesota- Adapted and European Cider Apple Cultivars for Minnesota Cider Production	University of Minnesota Extension will develop the young Minnesota cider apple industry by identifying apple cultivars that are well adapted and produce desirable cider traits, and by educating Minnesota orchardists and winemakers on the best practices for high quality cider products, including cider, wine, and infused beer and mead. The overall goal of the project will be achieved through the following objectives: 1) Evaluate and compare chemical and sensory attributes of ten (10) locally-adapted apple cultivars both as juice and cider; 2) evaluate ten European cider apple cultivars for production in Minnesota; and 3) develop recommendations based on the results of objectives 1 and 2, for apple growers and cider makers to grow and use apples for cider in the upper Midwest. In both years of the study (2020-2021), the juice from fruit of each cultivar at multiple orchards will be assessed for juice traits important to cider quality, including sugar-content (degree Brix), pH and Total Titratable Acidity (TTA). We will conduct analyses of the acid-profiles and phenolic compounds (tannins). The juice will then be fermented into cider and assessed for cider quality. The project team will develop a University of Minnesota Extension guide to growing and using apples for cider in Minnesota, using the results from this project. The content will be adapted into videos, web pages, and workshops, in order to effectively reach diverse audiences of apple growers and cider producers.	\$94,371.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Minnesota Department of Agriculture	\$1,366,227.46	14. Management of Late Season Potato Virus Y	The University of Minnesota Northwest Research & Outreach Center (UMN-NWROC) proposes to develop better risk estimates and management tactics to limit the late season transmission of Potato Virus Y (PVY), an aphid transmitted disease that limits both yield and quality of seed potatoes. Currently there are previously un-encountered factors facilitating the epidemic of PVY in MN; 1) new strains of PVY may be more easily transmitted than older strains and are becoming more common, 2) seed growers may be delaying killing vines to optimize bulking and increase yield, and 3) the recent recovery of 2 aphid species, which were previously uncommon but are now increasing due to the establishment of new cropping systems, may be additional efficient vectors of the disease. The tactics developed in this research will improve the within season management of the disease and improve the certification rates of seed potatoes by providing growers with optimal timing for management tactics that limit disease transmission while sustaining yield. Because there are few, if any, techniques to ‘cure’ viral plant diseases, this project will instead focus on the weak link in the disease transmission cycle, management of the insects that transmit the disease (referred to as ‘vectors’).	\$75,000.00
Minnesota Department of Agriculture	\$1,366,227.46	15. Opening Farm to Rural Grocery Markets for MN Specialty Crops	University of Minnesota Extension’s Regional Sustainable Development Partnerships (RSDP) will work with 15 Minnesota specialty crop farmers and 15 rural grocery store owners to increase Minnesota specialty crop farmer access to larger regional markets by opening new farm-to-rural-grocery market channels. More than 250 grocery stores are in Minnesota towns with populations under 2,500. While this project will primarily benefit specialty crop farmers, the reach extends to numerous small businesses and MN local economies. This project will develop a framework and resource materials to open new specialty crop farm-to-rural-grocery market channels across Minnesota. The objectives of this project include: 1) Publish the UMN Extension “Farm to Rural Grocery Store Toolkit,” 2) Develop a specialty crops farm to rural grocery (F2RG) workshop curriculum, and, 3) Deliver five F2RG workshops in rural Minnesota.	\$54,500.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Minnesota Department of Agriculture	\$1,366,227.46	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$151,676.61
Mississippi Department of Agriculture and Commerce	\$425,843.26	Cut Flower Producer Training	Flower Growers of Mississippi will increase the production/growing of cut flowers and market share by Mississippi farmers and growers by providing education on what, when and how to grow, harvest, condition and market locally grown cut flowers and will increase the number of flower farms in MS by 10 percent.	\$8,900.00
Mississippi Department of Agriculture and Commerce	\$425,843.26	Developing Sustainable Nutrient Management Practices to Optimize Blueberry Yield and Quality in Containerized Production	Blueberries are an important crop for MS. Nutrient management plays a critical role on timing of fruit production. By applying different rates of fertilizer, we might be able to control the timing of berry production to extend the production season even further to increase blueberry market price. Research has shown that nutrient management can also influence berry yield and quality including mineral nutrient and health beneficial compounds such as antioxidants. Currently there is limited information on how to efficiently manage nutrient management in containerized blueberry production to optimize yield and quality. Therefore, the objective of this proposed project is to investigate substrate type and sustainable nutrient management practices, both conventional and organic, inside and outside of high tunnels, to optimize plant growth, nutrient use efficiency, and improve blueberry yield and quality in containerized production. The project's results will be disseminated through grower meetings, workshops, field days, and national conferences.	\$30,097.80

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Mississippi Department of Agriculture and Commerce	\$425,843.26	Explore the Use of Heirloom Varieties in Specialty Vegetable Production of Mississippi	Production of edible horticultural crop is a very important part of agriculture in Mississippi. The value of horticultural crops in Mississippi in 2018 was \$104 million. It is challenging for growers to adopt heirloom varieties without recommendations on cultivar performance and suitable cultural practices. Therefore, Mississippi State University will conduct research to: 1) Collect and compare variety performance of different heirloom vegetables including tomatoes, beans, peppers, and cucumbers; 2) Develop cultural recommendations adapted to Mississippi climate; and 3) Investigate vegetable compositions and nutritional values of heirloom varieties compared to commercial ones. Results generated from this study are expected to increase competitiveness of Mississippi vegetable production and promote a healthy local food system in the state.	\$21,873.75
Mississippi Department of Agriculture and Commerce	\$425,843.26	GAP/GHP Cost-share Program to Better Equip Growers for the Produce Safety Rule	The Mississippi Department of Agriculture and Commerce (MDAC) would like to continue a reimbursement cost-share program with the goal of increasing the number of Mississippi farmers with GAP/GHP certification at 75 percent of certification costs or a maximum of \$500 to allow them to compete in these markets, while also educating other growers on the possibilities of new markets that can open once they receive this certification.	\$30,000.00
Mississippi Department of Agriculture and Commerce	\$425,843.26	Honey Producers Production Seminar	The Mississippi Beekeepers Association will provide two seminars over two years to relay knowledge that should enhance productivity of honey for sale and distribution within the state. These seminars are designed to give the commercial and sideliner beekeeping community the tools and information needed to increase productivity, production efficiencies, and food safety practices that will increase and enhance their businesses.	\$12,274.73

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Mississippi Department of Agriculture and Commerce	\$425,843.26	Identification of Lifecycle Volatile Organic Compound Signatures from Fungus Infected Sweet Potato	Mississippi State University proposes to continue development of Detection Machinery capable of identifying charcoal rot pathogen (<i>Macrophomina phaseolina</i> -Mp) contamination of sweet potato and other agronomic crops. This fungal species is a causal agent of charcoal rot in row and horticultural crops important to Mississippi's agricultural industry. Mp is the major cause of significant agricultural economic losses each year in the US, therefore analytical methods that can provide an early warning for the presence of Mp, especially with storage crops is economically important to the state. Portable fungi detection equipment that can be used within warehouse pre-storage and packaging facilities could eliminate losses and prevent infected product from entering the marketplace. Therefore, to complete the project it is necessary to maintain the collaboration of our diverse team to explore the development of rapid detection methods for qualitative and quantitative analysis of microbial volatile organic compounds (MVOCs) and extractable organic compounds (EOCs) to identify specific chemicals unique to Mp. This project will concentrate on collecting volatile chemical profiles during the entire lifecycle of the infected sweet potato. This will allow for the development of the discriminating algorithms that will be able to identify the presence of the fungus during all stages.	\$29,463.00
Mississippi Department of Agriculture and Commerce	\$425,843.26	Integrating Low-Cost Soil Moisture Sensor Technology for Sustainable Vegetable Production	Mississippi State University will implement soil moisture sensor technologies, irrigation management, and nutrient management strategies to mitigate over-or-under irrigating, nutrient leaching, decreased vegetable yields, while determining facilitators and barriers to stakeholder adoption of these technologies by developing scientifically-based practical measures and disseminating results through a multi-media website, Extension training module for new and beginning farmers, scientific and grower meetings, and hands-on field days.	\$37,671.30

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Mississippi Department of Agriculture and Commerce	\$425,843.26	Public Relations and Marketing Campaign to Promote Buying Mississippi Watermelons	Farm Families of Mississippi will develop and implement a promotional campaign that educates consumers on the benefits of buying Mississippi grown watermelons. We will establish a baseline sales figure for the 2019 crop year, produce and air television and radio spots and buy billboards and digital marketing space promoting the purchasing of Mississippi watermelons. We will then compile sales figures for the 2020 crop year to compare with the baseline sales figure, as well as statistics for the number of people potentially reached by our advertisements and promotional materials.	\$150,000.00
Mississippi Department of Agriculture and Commerce	\$425,843.26	Sustainability for Specialty Crop Producers thru Chef / Restaurant Partnerships	Eat Y'all will conduct two sales & marketing training workshops for specialty crop producers that will include classroom training, in-restaurant experience as well as a sales networking event with chefs. Follow-up mentoring and referrals will be provided to all program participants for up to 12 months.	\$23,962.00
Mississippi Department of Agriculture and Commerce	\$425,843.26	Using Soil Steaming and Cover-Crops for Weed Management and Increased Profitability of Tomato Production	The Mississippi State University will provide effective control of problematic weeds in tomato production systems using soil steaming and integrating them with cover crops and OMRI-approved herbicides. The main goal of this project is to use steaming in combination with cover-crop treatments to control major weeds in organically grown tomato, including yellow and purple nutsedge, annual grasses, and pigweed species. The soil steaming and cover-crop treatments will be compared with standard, conventional commercial practices, to determine the relative profitability and overall sustainability of the alternative system (utilizing soil steaming and cover crops) for growers. Results from this project will be made available to approximately 1,200 stakeholders at the Vegetable Field Day, American Society of Horticultural Science, and Southern Weed Science Society Annual Meeting, combined.	\$30,000.00
Mississippi Department of Agriculture and Commerce	\$425,843.26	Utilizing the Terminal Flowering Locus 1 Gene to Revolutionize Plant Breeding by Overcoming Flower Inhibition	The Terminal Flowering Locus 1 (TFL1) gene inhibits flower development. Roses and strawberries that carry mutant alleles for this gene continuously flower. Continuously flowering plants are precious to the landscape industry, and flower formation is also a key component of plant breeding programs. Mississippi State University will develop a revolutionary method to accelerate plant breeding by utilizing virus-induced gene silencing (VIGS) to initiate early	\$20,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			flower formation by programming the tobacco rattle virus (TRV) to turn off TFL1 in plants transiently.	
Mississippi Department of Agriculture and Commerce	\$425,843.26	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$31,539.41
Missouri Department of Agriculture	\$459,408.04	1. GAPs Certification Funding and Produce Safety Outreach for Missouri Producers	The University of Missouri (MU) Extension will assist at least 25 Missouri (MO) fruit and vegetable producers in earning USDA Good Agricultural Practices (GAPs) certification each year for two years of the project, which will help growers gain access to new markets that require this certification. This will help improve the profitability of MO fruit and vegetable producers and will enable more MO-grown produce to be sold through markets in MO (grocery stores, distributors, schools, etc.) that require GAP certification, so more MO consumers will have the opportunity to consume safe, MO-grown produce. To accomplish this, we envisage the following project activities: 1) Provide produce safety workshops and on-farm technical assistance to assist farmers with obtaining GAPs certification. 2) Establish a GAPs certification cost share program where MU Extension will directly pay USDA up to half of a MO produce farm's cost of USDA GAP certification, with a maximum payment of \$800 per farm per year. The farm will be responsible to pay the remaining certification costs. 3) Provide microbial water testing to farmers, which is a requirement for GAP certification. This project will build on the success of our previous and current produce safety training efforts, including on general produce safety, as well as on the FDA Food Safety Modernization Act (FSMA) Produce Safety Rule. We will also share templates and other information that can help MO produce growers obtain GAP certification on our MU Extension produce safety website, so other farmers can also access that information.	\$49,482.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Missouri Department of Agriculture	\$459,408.04	2. Assessing Demand for Missouri Specialty Crops	<p>The University of Missouri requests Specialty Crop Block Grant funding to measure how specialty crop food product demand varies throughout Missouri and share that information with Missouri producers, so they can make well informed marketing decisions. To assess demand for Missouri specialty crop products, the project will collect 1,100 survey responses from Missouri consumers — 100 in each of the 11 regions defined by the Missouri Department of Agriculture. Survey questions will ask consumers to indicate their preferences for specific foods (e.g., tomatoes, apples) and identify attributes (e.g., organic, local) that they expect. Questions will also gauge whether consumers have enough access to Missouri-grown specialty crop goods in various distribution outlets (e.g., grocery stores, farmers markets). By comparing responses on a regional basis, the project will create a regional food demand index that Missouri producers can reference to identify specialty crop marketing opportunities according to geography. The index will be shared via the Food Market Evaluation Tool in the Agriculture Opportunities in Missouri platform, an online educational resource that provides decision tools that producers can use to evaluate crop opportunities. Train-the-trainer sessions and direct-to-producer training will equip Missouri specialty crop producers with the market intelligence developed through the project and enable them to deliver products that satisfy Missouri consumers' needs and enhance their operations' competitiveness.</p>	\$25,031.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Missouri Department of Agriculture	\$459,408.04	3. Determining the Impact of the Endophytic Microbiome on Grape Physiology	<p>Researchers at the University of Missouri will investigate the role of grape endophytic microbes in grape berry growth, including berry size and cluster compactness. The grape berry microbiome is not well understood, and little is known about fungal endophytes. This study seeks to explore the role of the grape microbiome by manipulating it and measuring the effect. Preliminary results conducted in 2018 show that through the application of four different single-species commercial yeast to the grape clusters at bloom, berry size, cluster compactness and amount of juice at harvest were all affected by manipulation of the microbiota. In this study, we seek to understand the dynamics of the endophytic populations using Illumina sequencing, and to understand the role of these microbes in berry physiology. Little is currently known about the role of fungal endophytes in berry development. The implications of this research for Missouri grape growers is substantial, as Missouri's most widely planted white grape cultivar, Vitis interspecific hybrid cv. Vignoles, is a famously tight-clustered grape cultivar, resulting in high amounts of disease, and therefore, pesticide applications. While research has been undertaken for many years to attempt to loosen clusters, with little success. The preliminary research in this study, however, shows that both berry size and cluster compactness can be affected through changes to the microbiome. Furthering this area of research could lead to significant advancements in viticultural practices, resulting in changes to management of certain cultivars, including the potential for reduced pesticide usage.</p>	\$38,010.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Missouri Department of Agriculture	\$459,408.04	4. Buffer Distance Impact on Dicamba Damage to Potato, Watermelon and Tomato	<p>The Division of Plant Sciences at the University of Missouri, Columbia will estimate the safety of field grown potatoes, watermelons, and tomatoes to applications of dicamba on adjacent dicamba-tolerant (DT) soybeans. Currently, buffers from sensitive crops are required on the label (110 feet), but these are established based upon distance to adjacent sensitive soybeans and cotton. The sensitivity of specialty crops to dicamba may be higher, rendering current buffers insufficient. Growers planted 40 million acres of dicamba-tolerant soybeans nationwide in 2018. Off-target damage attributed to dicamba was widespread in 2018, even though guidelines for use were more stringent than for any other herbicide. In Missouri, up to 45 percent of soybeans in 2018 were dicamba-tolerant. Because soybeans in Missouri occupied ~5.7 million acres, the probability that dicamba applications occur near specialty crops is high. Specialty crops may be at risk both upwind and downwind of dicamba applications from particle or vapor drift. In addition to visual damage and reduced yield, the fruit of sensitive plants may also contain low concentrations of dicamba. Residues in fruit would reduce sales at farm-stands and farmer’s markets; residues in organic crops would make fruit unsaleable. Research would be conducted over a two-year period and results disseminated to vegetable growers throughout Missouri. Results would also be shared with dicamba manufacturers and the MO Dept. of Agriculture officials to determine if current dicamba use guidelines are acceptable. The viability of the vegetable industry and public trust for safe consumption of vegetables relies on research projects such as this.</p>	\$49,853.10
Missouri Department of Agriculture	\$459,408.04	5. Optimizing Cultivars and Processing for Hard Cider and Apple Wines	<p>The University of Missouri will revitalize the Missouri apple industry by opening new markets for growers by improving the quality of apple beverages that can be produced from Missouri-grown fruit. We will optimize processing options for common apple cultivars currently planted, as well evaluate new cultivars classically used for cider production. Results will be disseminated to stakeholders through a cider school, grower meetings, demonstrations, and on-line publications. The overall goal of this two-year project is to evaluate apple juice from conventional cultivars presently grown in Missouri, as well as those with high tannin content for processing with and without pomace into hard cider or wine.</p>	\$33,410.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Missouri Department of Agriculture	\$459,408.04	6. Evaluating Essential Oils for Insect Control in High Tunnels	<p>Webb City Farmers Market will test the efficacy of essential oils in repelling and killing of aphids, spider mites and Thrips in high tunnels. There is currently no research on essential oils to be found in any literature on specialty crops. With insects developing resistance to many chemicals and the need to protect beneficial insects, natural insecticides may provide relief for high tunnel farmers. The research component will consist of three farms, a certified organic farm, a farm that uses organic practices and one conventional farm. Oils to be purchased are pure 100 percent therapeutic and include 1) Cedar, 2) Lemongrass, 3) Peppermint, 4) Lavender and 5) Orange. These oils in various concentrations will be applied using a backpack fogger. Participating farmers will apply oils based on the insect issues in greens, tomatoes and cucumbers they have had in previous seasons. Application will be preventative at the start of the growing season and applied weekly year-round for two years. Farmers will observe insect populations on a weekly basis and record numbers of aphids, spider mite and Thrips present using sticky cards and traps.</p>	\$30,569.32

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Missouri Department of Agriculture	\$459,408.04	7. Explore the Economic Opportunities and Health Benefits of the Pawpaw in Missouri	<p>The University of Missouri Center for Agroforestry (UMCA) will identify the health-benefits and explore the novel uses of the pawpaw (<i>Asimina triloba</i>) in cosmetic, personal care products, nutraceutical and pharmaceutical industries by systematically examining their health-promoting compounds. Tasks to be completed to address this research aim include: 1) conduct scientific research in characterizing the health-promoting compounds in the pawpaw and its byproducts (fruits, juices, bark, leaves, and root extracts) through modern mass spectrometry, global metabolomics analysis and high-throughput screening bioassay protocol, 2) conduct a market research to identify potential uses and formulation of the identified health-promoting compounds from pawpaw and byproducts for cosmetic, personal care products and pharmaceutical industries; 3) conduct a national consumer survey to examine the niche market of the identified value-added products; and 4) perform outreach activities to transfer the knowledge about new uses, and market potentials to local producers, harvesters, and industries. A market guide will be compiled to provide information on health-promoting compounds from pawpaw and byproducts, their potential uses in producing value-added products in the industries; market price ranges for the identified value-added products; strategies in pricing pawpaw byproducts; and a database of potential byproducts buyers. Market potential of the organic based products derived from pawpaw and its byproducts will also be predicted and illustrated in the guide. The proposed study will increase the overall incomes of the chain production and benefit all the participants involved in the supply chain of pawpaw industry in Missouri.</p>	\$46,689.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Missouri Department of Agriculture	\$459,408.04	8. Columbia Farmers Market Specialty Crop Cooking Demonstration Educational Program	The Columbia Farmers Market will increase purchasing and consumption of specialty crops (SCs) by developing relationships with mid-Missouri chefs and establishing a specialty crop cooking demonstration program at the market. CFM customers will be educated on best cooking techniques of SCs through 30 cooking demonstrations (over two years) with local chefs, SC vendor and product information, through product samples, and by receiving recipe cards. Researchers at the University of Missouri will investigate the role of grape endophytic microbes in grape berry growth, including berry size and cluster compactness. The grape berry microbiome is not well understood, and little is known about fungal endophytes. This study seeks to explore the role of the grape microbiome by manipulating it and measuring the effect.	\$28,775.00
Missouri Department of Agriculture	\$459,408.04	9. Educating KC Metro Farmers on Climate Resilience Strategies	Cultivate Kansas City plans to develop a pilot program to help specialty crop farmers learn about, plan for, and adapt to current and projected changes in weather associated with climate change. The program will require 1) organizing farmer-to-farmer education groups (1 per year) that work to gather and share knowledge and data organizing; 2) training of systems to help farmers focus on development of a simple soil monitoring plan and strategies to increase soil resilience and productivity; 3) development of shared learning/ data gathering systems to help farmers focus on the challenges of changing pest pressures in specialty crops; and 4) assisting farmers with risk assessment and management plans related to current and future disruptions to their farming operations caused by climate change. The pilot will focus on strategies that help them ameliorate the impact of climate change through use of technologies such as shade cloth, insect netting, and high tunnels, develop farm resilience through storm water management, soil improvement, and crop diversification, and explore transformative approaches to their farming operations to ensure their farms will be productive and viable despite projected disruptions to their farming systems.	\$38,200.85

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Missouri Department of Agriculture	\$459,408.04	10. Impact of Viruses on Soluble Sugar Content in Grapevine Leaves	<p>The University of Missouri will research plant viruses such as Grapevine leafroll-associated virus 3 (GLRaV-3) and Grapevine red blotch virus (GRBV) that are major threats to grape and wine production in the United States. Both GLRaV-3 and GRBV have been associated with delays in ripening and altered fruit juice chemistry in <i>Vitis vinifera</i>, including a reduction in Brix and lower anthocyanin contents, as well as diminishing vine health. However, little is known about the impact of these viruses on the physiology of grape hybrids. Almost all the 1,700 acres of wine grapes grown in Missouri are hybrids. We recently completed a survey for grapevine viruses in Missouri and found that GRBV and GLRaV-3 were detected in a significant number of our samples. Consequently, it is important to investigate the impact these viruses might have on vine physiology. In this proposal we will examine the influence of virus infection on the accumulation of soluble sugars in leaves of Norton, Chambourcin and the symptomatic host Crimson Cabernet. Crimson Cabernet is the progeny of Norton crossed with Cabernet Sauvignon, resulting in a genetic background of 62.5 percent <i>V. vinifera</i> and 37.5 percent <i>V. aestivalis</i>. The accumulation of soluble sugars in leaves of grapevines infected with GRBV and GLRaV-3 has been associated with delays in berry ripening in <i>V. vinifera</i> varieties. The information generated from this research will be important for assessing the impact of virus infection on grape hybrid production and provide guidance for managing vineyards infected with GRBV and GLRaV-3 in Missouri.</p>	\$32,683.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Missouri Department of Agriculture	\$459,408.04	11. Optimization of Vignoles Grape Breeding Using Molecular Genetic Approaches	Missouri State University will research genetic resistance into grape cultivars by developing genetic mapping to prevent fungal diseases in the production of Vignoles. Vitis interspecific hybrid 'Vignoles' is a popular white wine grape in mid-Atlantic and Midwestern states including Missouri. It is a cold hardy French hybrid with V. vinifera 'Pinot Noir' background and produces high quality sweet fruity wines. However, it is highly susceptible to Botrytis bunch rot and powdery mildew. Thus, the production of Vignoles requires extensive pesticide use for fungal diseases. This study will begin with the confirmation of the F1 interspecific hybrids using simple sequence repeat (SSR) markers to enable rapid development of a mapping population. Careful genetic mapping of this population will provide the foundation and tools to associate molecular markers with the Botrytis bunch rot and powdery mildew resistance. The integration of effective genetic resistance into grape cultivars would reduce the dependence of viticulture on chemical inputs and have significant environmental, health and financial benefits.	\$49,900.00
Missouri Department of Agriculture	\$459,408.04	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$36,748.11
Montana Department of Agriculture	\$1,522,401.13	A diagnostics tool for potato and pulse crop pathogens	Montana State University will lead this project to develop a computer program to help identify fungal plant pathogens of potatoes and pulses from photographs captured with mobile phones. Seed potato and pulse production systems are negatively impacted by plant diseases that reduce crop yields, quality, and marketability. Because accurate disease diagnostics are time-consuming and often require specialized expertise and resources, this project aims to develop a fast, accurate, and inexpensive tool to enable diagnosticians to identify plant pathogens without specialized skills and resources. To accomplish this goal, the research team will identify common potato and pulse pathogens with traditional molecular biology tools, train artificial intelligence algorithm to identify pathogens from photographs, and Conduct workshops where diagnosticians will be trained.	\$104,718.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Montana Department of Agriculture	\$1,522,401.13	Advancement of Potato Virus Y Detection and Quantification Assays	Montana State University will lead the project to develop nucleic acid-based tests for Potato Virus Y (PVY) in both potato leaf and tuber tissue and to perform numerous nucleic acid based diagnostic tests on tuber and leaf samples. Montana growers have experienced increasing losses of early generation seed potatoes due to wider prevalence of PVY in their fields. PVY-infection reduces the value of the initially infected potato tubers, as well as successive generations of seed potato crops. Severe PVY-infection may result in loss of entire seed potato generations. One important strategy to limit PVY infection is early detection and elimination of infected plants. Currently, members of the MSU Seed Potato Lab inspect all potato fields in the state and intensively test leaf tissue in early generations for PVY using an antibody-based enzyme-linked immunosorbent assay (ELISA) to measure PVY incidence. The outcomes of this project include the development sensitive and quantitative PVY-diagnostic tests that will address Montana potato growers' need to obtain PVY-data in a timely fashion.	\$19,377.00
Montana Department of Agriculture	\$1,522,401.13	Expanding Montana's Apple Industry through Research, Outreach, Education and Orchard Preservation	Montana State University Western Agricultural Research Center (MSU-WARC) will lead this project to 1) provide farmer education; 2) support research; 3) plan and support infrastructures; and 4) increase consumer awareness. Through cultivar research both at the WARC and in heritage and commercial orchards around Montana, the research team will identify cultivars suitable to grow for cider and dessert purposes in extreme environments. The study will provide recommendation and other grower resources that are accessible to growers through publications and at workshops. MSU will work with established growers to continue to market Montana grown apples using the story of Montana's apple heritage to help the industry brand and to propagate heritage apple trees for distribution to growers through local nurseries.	\$189,435.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Montana Department of Agriculture	\$1,522,401.13	Expanding Montana's New Specialty Crop Producer Efficiencies through Mini-grants and Field-Tested Education	Expanding Montana's New Specialty Crop Producer Efficiencies through Mini-grants and Field-Tested Education will grow Community Food and Agricultural Coalition's (CFAC) established mini-grant process to financially aid a minimum of 12 beginning specialty crop producers over a one-year period to purchase farm infrastructure or tools that will increase on-farm production capacities. The project will provide education to farmers by way of one-on-one regional technical assistance and Field-Tested reports. The Field-Tested reports offer an avenue to educate other specialty crop producers throughout the state through a farmer-peer network to learn about time-saving tools, techniques to increase output, and infrastructure to enhance small-farms, which will increase production and competitiveness of specialty crops in Montana.	\$106,018.00
Montana Department of Agriculture	\$1,522,401.13	Farm to Glass Video Series	FireRoot Spirits will lead this project to create a compilation of twelve videos promoting Montana's orchards, vineyards, and farms, which take a specialty crop from the farm and craft it into a unique and delicious beverage. The object of making these 12 videos is to show the farms and craft beverage operations, encourage agritourism in Montana to purchase these value-added products in and out of state. Video is one of the best educational and marketing tools. This video series is intended to grow the knowledge and excitement about specialty crops, and their associated value-added production as a part of the Farm-To-Glass movement of Montana's craft alcohol industry, educating the public on the importance of specialty crops agriculture in our state's economy.	\$67,488.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Montana Department of Agriculture	\$1,522,401.13	Foundational Research for Specialty Crop Pollination Security – The (Wild) Bees of Montana	Montana State University will lead this project to collect bees in many un-sampled or under-sampled regions of Montana, and curate them into the Montana Entomology Collection. The project also includes a training of a student in bee taxonomy. Training the student in bee taxonomy is necessary to increase the efficiency. Identifying bees is the first step of building the knowledge on how pollination happens for specialty crops around the state. Mis-identifying or slowing the process of identification of bees will inhibit the project from meeting the goal of categorizing specialty crop pollinators. Building on the previous SCBG by MSU on huckleberry pollinators, this project will continue the first documentation of occurrence and distributional documentation of the native bees of Montana.	\$60,000.00
Montana Department of Agriculture	\$1,522,401.13	Identifying beneficial root traits in field pea and lentil breeding populations	Montana State university (MSU) will lead this project to identify: 1) the root characteristics that lead to water extraction patterns favorable for grain yield; 2) genotypic variability in traits such as root length density at different depths, biomass accumulation, harvest index, and water use efficiency; and 3) lines that could subsequently be used as parents in the breeding program. Water availability is the most important constraint to yield in Montana, and efforts are needed to understand characteristics that confer better tolerance and resilience in specialty crops under dry conditions. We can then use this knowledge in breeding programs to provide producers with better-adapted varieties. Root characteristics are candidate traits for improved drought tolerance but have historically been difficult to investigate. New tools are allowing us to observe roots in the ground and non-destructively over the growing season and assess differences between crops and cultivars. Root characteristics are likely to be the next major traits that will contribute to genetic gains for improved yields.	\$60,165.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Montana Department of Agriculture	\$1,522,401.13	Organic management of root rot disease complex, a major constraint to pulse crop production	Montana State University (MSU) will lead this project to accomplish the following tasks: 1) evaluate seven herbal essential oils for root rot pathogen growth inhibition in agar plate assay; 2) treat seeds of chickpea, dry pea, and lentil with essential oils. The effects of oil treatment on seed germination rate and phenotypes of subsequent plants will be compared with untreated seeds to determine phytotoxicity; and 3) treat seeds at non-phytotoxic essential oil dilutions. Treated seeds will be planted in soil inoculated with each of the root rot pathogens; 4) evaluate Different dilutions of the seven herbal essential oils for toxicity on commonly used strains of Rhizobium species for chickpea, dry pea, and lentil; and 5) evaluate the effectiveness of the oils to eliminate root rot pathogens in infested soils.	\$82,226.00
Montana Department of Agriculture	\$1,522,401.13	Plant Nutrition and Soil Fertility Management for High Tunnel Vegetable Production	Montana State University will lead this project to 1) identify the most effective soil amendments to increase the yield and quality of specialty crops grown in high tunnels; 2) document the effect of soil amendments on measurable soil health parameters; and 3) engage with specialty crop producers to foster dialogue about implementation and interpretation of the tests that can be used in plant nutrition and soil fertility management. The objective of this project is to address market gardener’s concerns regarding soil fertility in the production of high value specialty vegetable crops. This research will help Montana specialty crop growers using high tunnels to manage soil health to both maintain cropping intensity and mitigate risks of excessive nutrient accumulation.	\$118,208.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Montana Department of Agriculture	\$1,522,401.13	Root rot mitigation in specialty crops	This project by Montana State University focuses on dry pea production in Montana but will benefit lentil, chickpea, dry bean and potato production since dry peas are often grown in rotation with these crops. Aphanomyces root rot is a major threat to the pulse crop industry and has driven dry pea acreage out of infested areas in Canada and North Dakota. Once Aphanomyces is established in a field, the rotation interval for susceptible crops is 8-20 years. Prevention is highly preferable to management after infestation, as this disease is very difficult to control. Here, we will continue host range studies of A. euteiches isolates collected in Montana, study simulated greenhouse crop rotation cycles for effect on Aphanomyces root rot disease potential, test the relationship between pH and Aphanomyces growth and disease severity, and disseminate the information to growers and stakeholders.	\$65,214.00
Montana Department of Agriculture	\$1,522,401.13	Strategically Growing Cider and Apple Market In Montana	The Northwest Cider Association (NWCA) will lead this project to conduct direct to consumer and industry professionals (gatekeepers) marketing to grow the overall market for cider made in Montana. Consumers, buyers, and bartenders in Montana are not largely aware of the variety and quality of cider produced in Montana. This project will coordinate a marketing campaign to simultaneously raise consumer awareness of Montana cider and build out the supply chain for Montana cider sales. Based on the foundation of previous efforts, this project will address the lack of awareness about Montana craft cider through strategic, traditional advertising and marketing projects. NWCA will also address the supply chain limitations and grow distribution for cider through the state targeted industry events and education campaigns.	\$106,345.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Montana Department of Agriculture	\$1,522,401.13	Supporting emerging needs and enhancing profitability in Montana small fruit production through research, education, and market development	Montana State University (MSU) will lead this project to address emerging grower needs and knowledge gaps, with anticipated outcomes, with the following five focuses: 1) defining and assessing treatments to lengthen the window of fresh marketability for haskaps and serviceberries, 2) determining consumer acceptance for fresh market sour cherries, haskaps, and service berries, relative to other fruits available at similar seasonal time frame, 3) determining fruit postharvest characteristics for value-added products 4) tabulating and reporting expected labor costs, and 5) performing grower education and consumer awareness activities. This project addresses meets objectives in all four program Montana Department of Agriculture (MDA) Specialty Crop Block Grant (SCBG) priorities, including Farmer Education, Research, Planning and Infrastructure, and Consumer Awareness.	\$167,731.00
Montana Department of Agriculture	\$1,522,401.13	Understanding Chickpea and Dry Pea Water Use to Build Better Crop Rotations	The Montana State University will lead this project to conduct a replicated study using drip-irrigation to supplement seasonal precipitation and a regression model to quantify the yield response of chickpea and pea in a semi-arid environment. Pulse crop water use is less than wheat, but quantification is not known for the producers in Montanathis region. A better understanding of water use efficiency (WUE) of pulses will assist growers in deciding on appropriate crop sequences. This project aims to generate a regression analysis to analyze chickpea and dry pea yields in an experimental design where small increments of irrigation water are added to a rainfed system to provide side by side environments, using the drip irrigation to quantitatively make these water additions. The study aims to gain a better understanding of water use efficiency (WUE) of pulses, which will benefit growers in making better decision on appropriate crop sequences.	\$83,670.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Montana Department of Agriculture	\$1,522,401.13	Variety Selection and Agronomic Performance of Faba Bean	Montana State University will lead this 3-year pioneer project to evaluate faba bean germplasm to select varieties suitable for cover crops and/or grain production, and to develop agronomic best-management strategies. Faba beans is not as susceptible to crop disease and has the potential to be successfully integrated in the cropping systems in Montana. Promoting faba bean (and other legumes) can reduce the need for nitrogen fertilizers that can lead to environmental pollution and greenhouse gas emission. This project aims to improve faba bean production in Montana by screening germplasm, under dryland and irrigation, to select adapted varieties. This research will also focus on best management practices for planting date, seeding rate, and disease management. It will provide growers with knowledge and tools to grow faba beans more efficiently and profitably.	\$41,187.00
Montana Department of Agriculture	\$1,522,401.13	Variety Selection and Intercropping Strategies for Disease Management in Conventional and Organic Chickpea Production	Chickpea (<i>Cicer arietinum</i>) is a high-value pulse crop with excellent market potential and rotational benefits for growers in Montana. Demand for chickpea, especially for organic chickpea, has been growing rapidly, creating opportunities for growers. Disease management is the primary challenge in both conventional and organic productions. Recently, researchers and growers are attempting to intercrop chickpea with other crops, such as flax, in conventional and organic production systems to reduce disease infestation and spread. However, little information on what varieties are compatible with what crops in intercropping, and agronomic strategies have not been well developed for intercropping chickpeas.	\$137,383.00
Montana Department of Agriculture	\$1,522,401.13	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$112,718.17

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Nebraska State Department of Agriculture	\$733,142.16	A Wine Industry Dilemma: Does Crop Size Reduction Make Better Wine?	The University of Nebraska – Lincoln (UNL) Viticulture Program will lead this project to optimize vineyard production and quality in order to produce the best quality wine at the most profitable crop load. This project will 1) control crop load at three levels for two different cultivars of grapes in a commercial vineyard; 2) apply best canopy management practices for the different cultivars based on their individual growth characteristics ; 3) assure that crop load is the experimental variable providing meaningful results; 4) compare field sampling versus lab analysis of fruit quality and wine quality; 5) establish if crop load affects ripening time and thus harvest date; and 6) determine crop load level that produces the best quality wine.	\$69,948.00
Nebraska State Department of Agriculture	\$733,142.16	Adoption of Evapotranspiration (Crop Water Use), Irrigation Requirements, Crop Production Functions and Crop Coefficients of Vineyard, Watermelon, and	The University of Nebraska-Lincoln (UNL), in partnership with produce growers, will measure crop evapotranspiration (ETc), irrigation requirements (IR), ET-yield production functions (ETYPFs) and crop coefficients (Kc) for three different irrigated watermelon hybrids, irrigated and rain-fed sweet corn, and irrigated vineyards. This study will make significant contributions in providing information and knowledge to producers that are seeking to better manage their specialty crops. The end goal is to provide producers with scientific and research-based data and information that will help them make better informed decisions in their crop and water management practices, enhance their productivity, and increase their economic return.	\$93,396.00
Nebraska State Department of Agriculture	\$733,142.16	Development of CRISPR/Cas Gene Edited Dry Bean for Non-GMO Genetic Modifications	The University of Nebraska – Lincoln, Department of Plant Pathology, will develop a dry bean gene editing (CRISPR/Cas) system that offers quick and targeted development of next generation of improved common dry bean genotypes able to mitigate negative effects of diseases, drought and other adverse conditions stabilizing and improving productivity and availability of this nutritious food crop. Availability of genetically altered bean lines free from regulatory constraints of transgenic plants will significantly expedite the ongoing comprehensive, integrated and multi-disciplinary approach for common bean improvement expanding opportunities and enhancing crop value for the Nebraska dry bean growers.	\$42,120.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Nebraska State Department of Agriculture	\$733,142.16	Elucidating the Genetics of Bacterial Wilt Resistance in Dry Beans and Mapping the Resistance Genes	The University of Nebraska will lead this project to test a Recombinant Inbred Line Population developed by single seed descent against the seven bacterial wilt isolates. Bacterial wilt has reemerged as a significant disease impacting dry bean production throughout the Central High Plains. This project plans to 1) elucidate the inheritance of bacterial wilt resistance in dry beans; 2) map the genes associated with bacterial wilt resistance.; 3) identify molecular markers that can be used in dry bean breeding programs; and 4) Genetic characterization of bacteria isolates. The overall goal of this project is to determine the genetics of bacterial wilt resistance and identify molecular markers that can be used in dry bean breeding programs.	\$48,630.00
Nebraska State Department of Agriculture	\$733,142.16	Great Plains Hybrid Hazelnut Trials	The University of Nebraska – Lincoln, Nebraska Forest Service (NFS) will lead this project aims to provide test plants for interested collaborators in western Nebraska, central Kansas, eastern Colorado, southern Arkansas, and central Tennessee. NFS will purchase and distribute two genotypes of hybrid hazelnuts to collaborators for testing. Below is the work that will be performed. NRF will collect data from the collaborators to include plant survival, cold hardiness, disease resistance, and pest issues, and to compile data to examine whether the plants are indeed suitable for each state and climate zone. The result will be delivered in different platforms.	\$10,800.00
Nebraska State Department of Agriculture	\$733,142.16	Growers Leaderboard – Youth Education Program	Nebraska Extension will provide summer outreach education programs to urban and rural youth ages 13-18 in the cultivation, production, harvest, and distribution of fresh specialty crops to increase awareness, improve personal wellness, community involvement, explore opportunities in entrepreneurship, and expand availability of specialty crops in fresh food drought areas. Participants will develop and cultivate specialty crops in a garden, record productivity data, determine and record amount of harvest consumed and distribution through a team accountability competition described as the Growers Leaderboard.	\$40,526.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Nebraska State Department of Agriculture	\$733,142.16	Honey Production: Testing the Effectiveness of Alternative Hive Structures	The Center for Rural Affairs (CFRA) will lead this project to test the effectiveness and production of alternative hive structures, in partner with the University of Nebraska – Lincoln (UNL) Bee Lab and area beekeepers. The honey industry has experienced a drop in the number of hives since at least 2015 through pressures on bee health and beekeeper retirement. This project will educate new and existing beekeepers on alternative hive structures that support honey production and honey bee health by tracking production and hive behavior at existing apiaries selected as test sites. Results will be shared with beekeeping associations, the newly established Great Plains Master Beekeeping program, and through CFRA media to reach other beekeepers.	\$62,875.00
Nebraska State Department of Agriculture	\$733,142.16	Improving Pest Management in Dry Edible Beans Using a Western Bean Cutworm Monitoring Network	The University of Nebraska’s Panhandle Research and Extension Center (UNL-PHREC) will create a program for the more effective control of the Western Bean Cutworm. The goal of this project is three-fold. First, we intend to design and develop a Western Bean Cutworm monitoring network that will provide timely, accurate information to growers and crop consultants. Second, we intend to analyze the effect of insecticide applications on beneficial arthropods and damage levels in dry edible bean. Third, we intend to quantify the economic impact of the Western Bean Cutworm on Nebraska’s dry edible bean production with a particular focus on the correlation between Western Bean Cutworm numbers and dry bean damage. Results will be made available to the public.	\$32,832.00
Nebraska State Department of Agriculture	\$733,142.16	Increased Access and Awareness of Nebraska’s Specialty Crops through Culinary Education (IAANSCE)	Southeast Community College (SCC) will lead this project to increase awareness, access, and utilization of selected Nebraska specialty crops. The project has four components: 1) SCC’s Culinary Program will create and incorporate specialty-crop-specific content into the culinary curriculum; 2) culinary students will grow specialty crop foods in a campus garden, an innovative way to make the curriculum more engaging and hands-on; 3) the culinary curriculum will include more class visits to farms that produce specialty crops; and 4) conduct outreach in SCC’s student-operated restaurant and coffee shop, demonstrations, and educational events by promoting and featuring dishes made with specialty crops. SCC will also	\$37,463.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			evaluate effectiveness of curriculum in increasing students' intention to access and utilize specialty crops post-graduation.	
Nebraska State Department of Agriculture	\$733,142.16	Producing High Seed Protein Pea Manipulating Nitrogen Fertilizer Application in Nebraska Panhandle	The University of Nebraska-Panhandle Research and Extension Center will evaluate nitrogen fertilizer management strategy (rate, sources and time of application) for improving pea seed protein quantity and quality in western Nebraska. The project will be in collaboration with Drs. Bijesh Maharjan (UNL-PHREC) and Dr. Kaustav Majumdar (UNL Food Sci. & Technology). Two high seed protein and two low seed protein varieties will be plated at under rainfed production conditionals in Sidney and Scottsbluff following three different N sources, four N rates and two different application times. The experiments will be repeated 2nd year. An on-farm trial will be conducted to compare farmer's common practice and a best N source/rate identified in year-1 & 2.	\$43,200.00
Nebraska State Department of Agriculture	\$733,142.16	Terroir of Nebraska Grown Hops	University of Nebraska-Lincoln researchers will deploy Arable Mark P001 sensors in Sutton, Norfolk, Lincoln, and Panhandle regions of Nebraska to collect environmental and hop growth data from diverse Nebraska growing environments. Hop tissue samples will be collected at multiple times throughout the growing season and subjected to gas chromatography-mass spectrometry (GC-MS) and X-ray fluorescence (XRF) to characterize volatile compounds and other elements. A model will be developed to describe how hop flavor profiles are influenced by their growing environment. In years two and three, similar samples will be collected from different hop yards in Eastern Nebraska to validate and refine the models.	\$52,056.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Nebraska State Department of Agriculture	\$733,142.16	Vegetable Variety Trial Research and Education for Eastern Nebraska Growers	The University of Nebraska-Lincoln and Nebraska Extension will lead this project to provide tools and educational programming and resources to help produce farmers in Nebraska improve yields and performance by conducting vegetable variety field trials on broccoli, bell pepper and cucumbers. This project will 1) evaluate newly-released broccoli, bell pepper, and cucumber cultivars for yield, quality, pest-resistance, and customer preference across two years and a minimum of three farms per crop in eastern Nebraska; 2) develop educational programming and published resources about vegetable cultivar selection for commercial growers.; and 3) evaluate learning implications of on-farm research and the emergence of participating producers as farm community leaders.	\$90,462.00
Nebraska State Department of Agriculture	\$733,142.16	Year-Round Strawberry Production / New Propagation Techniques	Papio Valley Nursery Inc., in conjunction with the University of Nebraska – Lincoln (UNL) will conduct technology transfer experiments at Papio Valley greenhouses. Utilizing a new heat and power-combined energy system, the goal is to create year-round production schedules for fresh strawberries and conduct experiments on propagation of strawberry plants. If successful, this project will allow Nebraska growers to obtain dormant crowns locally and/or produce fresh berries throughout the year.	\$50,000.00
Nebraska State Department of Agriculture	\$733,142.16	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$58,637.46
Nevada Department of Agriculture	\$297,705.05	10th Annual Nevada State Beekeepers Conference 2020	The Mason Valley Beekeepers (MVB) is organizing the 10th Annual Nevada State Beekeepers Conference on February 21-22, 2020 in Yerington, Nevada. This conference intends to provide research, education and outreach for local honey producers and others interested in beekeeping. Funding this grant will provide speaker fees and lodging for renown educators and researchers in the beekeeping industry and help defray the cost of the conference venue.	\$10,040.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Nevada Department of Agriculture	\$297,705.05	Butternut Squashes-Field to table	The objective of this research and education project are to test the new variety of butter nut squash, 898 squash which is found to have concentrated sweetness, flavor, beta-carotene, and mature in 110 days, and thus compare the outcomes with already existing two marketable varieties which tend to have thin skin and short shelf life. The addition of new variety will enhance the competitiveness through increased production and thus consumption by introducing this new crop to regional community and specialty crop producers through different outreach activities. Project will be conducted at two locations (research station, Fallon and farmer's field) for three years starting March 2020 and will be completed by September 2022. The project aims to establish local growers and school students (at Fallon, Lovelock, Yerington) awareness and knowledge of butter nut squash as a valuable new specialty crop, and associated health benefits of increasing locally grown produce.	\$24,982.00
Nevada Department of Agriculture	\$297,705.05	Establishing Best Production Techniques and Varieties for Enhancing the Production of Nevada Grown Melons	The Desert Farming Initiative (DFI) in collaboration with University of Nevada Cooperative Extension (UNCE), both housed in the College of Agriculture, Biotechnology and Natural Resources (CABNR) at the University of Nevada, Reno (UNR), propose to develop a melon variety field trial to identify varieties that confer improved crop performance, increased yields, and fruit quality; and to evaluate production techniques and Integrated Pest Management (IPM) methods that may accelerate crop establishment and improve performance, yield, and fruit quality in the Nevada high desert climate. Results from this study will increase confidence of best melon varieties, production techniques, and IPM methods to adopt for increasing the competitiveness of melons and farm sales revenue.	\$70,052.18
Nevada Department of Agriculture	\$297,705.05	Expansion of Specialty Crop Production and Programming at Park Farm	Reno Food Systems (RFS) will expand both production of specialty crops and programming related to specialty crops at its Park Farm location, thereby increasing the availability of specialty crops while also training the next generation of specialty crop farmers in Washoe County.	\$69,800.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Nevada Department of Agriculture	\$297,705.05	Expansion of the Production and Use of Specialty Crops in Douglas County	Douglas County, Nevada will survey current and future demand for specialty crops, identify local farming potential to grow these crops, identify benefits of future Agrihood developments to make significant growth of these crops and initiate expanded production through a demonstration project. Agrihoods are organized communities that integrate agriculture into a residential neighborhood to facilitate food production. This allows for more growers to collaborate on production in a relatively small space with local access.	\$52,000.00
Nevada Department of Agriculture	\$297,705.05	Growing NV: A local food week celebration of specialty crops based in Reno, NV	NEON Agency will expand upon the event 'Growing NV': a weeklong celebration of specialty crop themed events (daily) during the second week of August for a second year to increase demand for specialty crops.	\$29,750.00
Nevada Department of Agriculture	\$297,705.05	Reno Garlic Fest 2020	Reno Food Systems will host Reno Garlic Fest (RGF). RGF will be a convivial and educational garlic one day event featuring local farmers selling garlic, local chefs selling garlic-based foods, educational literature and workshops highlighting the benefits of local garlic production and consumption, and additional sources of locally grown crops through activities and musical entertainment for people of all ages. Reno Food Systems sees the Reno Garlic Fest (RGF) as the perfect opportunity to connect our local community to the local food system in a tangible and entertaining way. From production to selling to consumption, folks will have an opportunity to learn about and celebrate one of the region's finest specialty crops.	\$16,850.00
Nevada Department of Agriculture	\$297,705.05	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$21,877.93
New Hampshire Department of Agriculture,	\$296,263.40	1. Increasing Awareness and Consumption of NH Grown Tree Fruit	New Hampshire tree fruit growers annually produce crops of apples, peaches, plums, pears, apricots, and cherries. In New Hampshire there has been a transition from tree fruit production for wholesale markets to production focused on local on-farm retail and harvest-your-own sales and sales to local grocery stores, farmers markets, schools, etc. This project led by the New	\$30,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Markets and Food			Hampshire Tree Fruit Growers Association will focus on outreach to the local consuming public by creating marketing activities such as using social media platforms to increase interest and promote farm visits as well as promotion of the New Hampshire Tree Fruit Growers Association website. Additionally, this project will work to gain publicity for the tree fruit industry in New Hampshire through targeted multi-media outreach via print, radio, and television media.	
New Hampshire Department of Agriculture, Markets and Food	\$296,263.40	2. Exploring Herb Enterprises to Increase Farm Profits and Diversify Farm Production	Small and Beginner Farmers of New Hampshire (SBFNH) has put together a twelve-workshop series to encourage farmers to explore herbal enterprises. SBFNH will be working with the NH Herbal Network and Genuine Local for education and support for this project.	\$21,963.58
New Hampshire Department of Agriculture, Markets and Food	\$296,263.40	3. Identifying Cold-hardy Hydrangea Cultivars for Cut Flower Production and Sales in NH	The University of New Hampshire Cooperative Extension will identify suitable panicle and oakleaf hydrangea cultivars for cut flower production and sales in New Hampshire. Results will be shared in a cultivar selection guide and at grower meetings throughout New Hampshire.	\$42,990.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Hampshire Department of Agriculture, Markets and Food	\$296,263.40	4. Integration of Natural Products to Enhance Efficacy of Fungicides for Control of Summer Fruit Rots and Postharvest Decay of Apple	Management of tree fruit diseases is especially challenging in the Northeastern United States due to ideal climatic conditions for plant pathogens. To manage diseases successfully and sustainably, an integrated approach is necessary. The University of New Hampshire will conduct a series of research and commercial orchard trials to develop best practices for the use of natural products to manage apple fruit rots. The specific objective of this project is to evaluate integration of the natural biostimulant, chitosan, into apple IPM spray programs for management of fruits rots that develop during the growing season and postharvest. Experiments will test chitosan application timing and rate in combination with standard and reduced risk fungicide spay programs typical of NH apple orchards. The outcomes of this project include identification of chitosan spray schedules that reduce fungicide inputs, reduce losses to disease, improve fruit quality, reduce risk of fungicide resistance, and contribute to conservation of natural resources. This research is an important step in grower adoption of effective and sustainable practices for disease management. Results will be disseminated to stakeholders through grower meetings, twilight meetings, and UNH Extension publications.	\$32,082.00
New Hampshire Department of Agriculture, Markets and Food	\$296,263.40	5. Establishing a Statewide Food Hub Network to Support New Hampshire's Local Food Economy	Kearsarge Food Hub will partner with four additional New Hampshire regional food hubs to establish a statewide network to improve the local food economy through sales, aggregation, and distribution of locally grown specialty crop products. Regional food hub partners include Monadnock Menus/Food Connects in Keene, NH; Genuine Local in Meredith, NH; Three River Farmers Alliance in East Kingston, NH; and North Country Farmers' Cooperative in Colebrook, NH.	\$20,250.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Hampshire Department of Agriculture, Markets and Food	\$296,263.40	6. Plant Something NH	Plant Something NH is a program of the New Hampshire Plant Growers Association (NHPGA), founded under a 2015 Specialty Crop Block Grant and adopted in 2016 for New Hampshire, as part of a national grassroots campaign with a mission to promote public awareness of the health, environmental and economic benefits of plants to increase consumer support of local growers, nurseries, garden centers, landscapers, and affiliated trades. In 2018, the work of public education and building public awareness continued with a variety of promotions including public radio, social media and public relations. In addition, a consumer-focused seasonal e-Newsletter was introduced, and industry and consumer surveys developed to better understand and serve NHPGA's audience. This project will analyze survey data to guide marketing efforts moving forward and continue the industry benchmarking survey to inform best business practices, while maintaining the foundations of the program already in place.	\$20,000.00
New Hampshire Department of Agriculture, Markets and Food	\$296,263.40	7. Increasing Low-Income Family Access to Specialty Crop Production in New Hampshire's Upper Valley Region	Vital Communities' Valley Food & Farm (VFF) program will work with farmer-partners, school districts social service agencies, community centers, and farmers markets engaged in VFF's three-year Community of Learning, Inquiry, and Practice (funded by a grant from the USDA Farmers Market Promotion Program) to increase consumption of affordable, culturally appropriate fresh and local fruits and vegetables for children and families at risk for food insecurity in the Claremont area of New Hampshire.	\$34,676.00
New Hampshire Department of Agriculture, Markets and Food	\$296,263.40	8. Buy NH Specialty Crops Targeted Media Campaign in Partnership with NH Division of Travel and Tourism Development	The New Hampshire Department of Agriculture, Markets and Food (NHDAMF) will continue a successful partnership with the NH Division of Travel & Tourism Development to promote the purchase of local New Hampshire specialty crops by visitors to New Hampshire from neighboring states and regions. This new program will build upon previously established efforts to market New Hampshire specialty crops.	\$70,587.89
New Hampshire Department of Agriculture,	\$296,263.40	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$23,699.95

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Markets and Food				
New Jersey Department of Agriculture	\$839,401.90	Advertising Jersey Fresh Blueberries – 2020	The New Jersey Blueberry Growers Association will lead this project to promote awareness and purchase of New Jersey Grown blueberries in season via a digital billboard campaign on major arteries throughout the state through the contract with a professional advertising agency. The objectives of the project are 1) inform consumers in a timely manner of the availability of Jersey Fresh blueberries; 2) create maximum demand for a highly perishable specialty crop during a limited growing season.; 3) promote Jersey Fresh blueberries as locally grown; and 4) increase demand for New Jersey blueberries.	\$40,000.00
New Jersey Department of Agriculture	\$839,401.90	Bringing Awareness to 'Jersey Fruit' Farms and Local Specialty Crops Through Marketing and Advertising Initiatives	Princeton Partners will lead this project to address the need for New Jersey Specialty Crop growers to be recognized for their valuable contribution to the local, healthy, and fresh foods grown in the "Garden State." The purpose of this project is to enhance the visibility and image of our Jersey Fruit Cooperative family run farms using a multipronged advertising approach to reach consumers and retailers/suppliers. Marketing toward consumers will highlight our local, sustainable, and family farms while industry marketing will be directed toward product safety and quality. Yearly sales records will be compared to verify if the marketing campaign is reaching the intended audience.	\$40,000.00
New Jersey Department of Agriculture	\$839,401.90	Continuing to Cultivate New Specialty Crop Expertise	The Atlantic County Board of Agriculture (ACBA) and Rutgers New Jersey Agricultural Experiment Station will lead this project to support summer interns to provide positive encouragement for those pursuing farming or agricultural careers. Through this project, summer student interns will graduate with positive, realistic, hands-on farm production, pest management and research experience that will make them more employable, either directly on specialty crop farms, by farm support businesses, or more attractive as potential graduate students pursuing advanced degrees in	\$19,367.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			agriculture. The project will also study the impact of the internship experience on the intern's goals of pursuing an agricultural career.	
New Jersey Department of Agriculture	\$839,401.90	Ecology Based Weed Management Strategies for Beginning Organic Farmers	The Mercer County Board of Agriculture, in collaboration with Meredith Melendez (Agricultural Agent) and Thierry Besancon (Extension Specialty Crop Weed Specialist) are applying for SCBG funds to educate beginning farmers on weed control options. The purpose of this project will be to provide practical ecology- and biology- based weed management tools to help beginning farmers improving overall IPM and reducing costs associated with weed management over the long term. Information will be delivered through presentations at one vegetable growers twilight meeting in the summer and three workshops during the winter season.	\$15,585.60
New Jersey Department of Agriculture	\$839,401.90	Extending Strawberry Season in NJ through development and testing of new and existing strawberry varieties.	Rutgers University will lead this project to evaluate new NJAES strawberry crosses for extension of the production season for New Jersey growers. The project will develop and test new strawberry selections with a focus on season extension but also examine key traits such as flavor, yield, berry size, and disease resistance. Growers will help the Rutgers Research Team evaluate crosses and selections based on flavor, fruit quality, size and other key attributes to evaluate and incorporate day-neutral varieties suitable to New Jersey growing conditions. Results of the research and observational trials will be presented at local, state, and regional meetings, workshops and programs.	\$39,990.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Jersey Department of Agriculture	\$839,401.90	Increasing Sales and Consumption of Specialty Crops through Database Technology, Customer Education, and Marketing	The Tri-County Cooperative, consisting of 70+ grower members, seeks to enhance marketing and efficiency of operations in the sale of specialty crops through updated database technology, educational demonstrations and events, and marketing of specialty crops through “buy local” promotions. In addition, Tri-County has great potential to be an agritourism site, with its historic roots, central location between New York and Philadelphia, land for production, and unique wholesale pricing affordable to restaurants and community members on restrictive budgets. The market needs a fresh update, not only in its physical appearance, but also its ability to welcome new customers and make it a place where families come to shop, restaurants source from their local farms, and wholesalers move product efficiently.	\$40,000.00
New Jersey Department of Agriculture	\$839,401.90	Increasing Sales of Plants and Flowers in New Jersey through the ‘Plant Something’ Marketing Program	The New Jersey Nursery and Landscape Association seeks to further develop a Plant Something Campaign started using SCBG funds awarded in FY2015. Our aim with this project is to continue to expose consumers in New Jersey to the successful Plant Something promotion being implemented around the country with a goal of increasing the sale and use of New Jersey grown landscape flowers, plants and trees. The project will accomplish the following: 1) increase participation and buy-in from plant dealers in New Jersey; 2) identify partnerships to increase messages and move towards project independence; 3) increase social media messaging and subscriptions; 4) integration of New Jersey specific messaging and Jersey Grown/Jersey Native brand; and 5) Identify other opportunities as appropriate, including the dissemination of identification and reporting methods to prevent the spread of devastating pests.	\$30,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Jersey Department of Agriculture	\$839,401.90	Jersey Vines: Creating Awareness of Jersey Wines	Working in collaboration with the New Jersey Department of Agriculture, the Garden State Wine Growers Association will use funding awarded from this Specialty Crop Grant to develop a marketing program that builds on the legacy of the Jersey Fresh program to promote N.J. wines. Our program will be called Jersey Vines. The goal of our campaign is to create awareness of the outstanding selection of wines produced in the Garden State by creating a highly visible consumer campaign, using an identifiable logo that has the same look as the Jersey Fresh logo. The Jersey Vines logo will be used for in-store signage, bottle neck tags and shelf and aisle signage at retail locations, as well as on marketing materials targeting potential consumers throughout the state.	\$19,270.00
New Jersey Department of Agriculture	\$839,401.90	Marketing Program for Jersey Fresh Local Peaches by the New Jersey Peach Promotion Council	The New Jersey Peach Promotion Council (NJPPC) will lead this project to improve the exposure of New Jersey peaches and their presence in profitable markets in New Jersey metropolitan area including Philadelphia and New York, and New England. The project will also expand and develop a more informative media release, media delivery, and follow up visitation by phone or in person program. NJPPC will also work with the Rutgers University in the development of new and novel varieties and products for our NJPPC grower/ members to increase demand and for NJ grower members peaches.	\$40,000.00
New Jersey Department of Agriculture	\$839,401.90	Precision GPS mapping, photosynthetic light measurement, and growth chamber equipment for Rutgers researchers' cranberry experiments.	The American Cranberry Growers' Association (ACGA) will procure research equipment for the Rutgers Experiment Station scientists for precisely locating and monitoring Fairy Ring disease; for mapping and quantifying pre- and post-emergent herbicide treatments for weed control and phytotoxicity; and for experiments on disease and rot resistance and new varieties. The results will be communicated at biannual ACGA meetings and will enhance growers' sustainability by improving disease and weed management.	\$34,204.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Jersey Department of Agriculture	\$839,401.90	Project to maximize the effectiveness of the Jersey Fresh advertising program in 2020 and beyond	The New Jersey Department of Agriculture seeks Specialty Crop Block Grant funding to raise awareness of locally grown specialty crops and to drive sales through a multi-faceted marketing campaign. The Department seeks to increase the overall effectiveness of the marketing of all specialty crops in New Jersey through the continuation of the proven successful efforts of the Jersey Fresh program. This will be accomplished using outdoor advertising (digital billboards and bus sides), print ads, radio, point of sale materials and social media and other online promotions.	\$378,310.90
New Jersey Department of Agriculture	\$839,401.90	Promoting Specialty Crops Produced by the New Jersey Council of Farmers and Communities	The New Jersey Council of Farmers and Communities (NJCF) will lead this project to market through traditional and social media avenues the promotion of specialty crop products that all associate farmers produce over the next 3 seasons (June – October) beginning in 2020. The objectives of this project are to 1) advertise specialty crops through the community markets and farms; 2) train market managers to effectively highlight specialty crops sold at their markets; 3) dedicate the NJCF website to specialty crop marketing and shopper resource; 4) use of marketing manager for social media and traditional advertising; and 5) utilize NJCF markets promoting specialty crops availability at NJCF markets on different locations and days.	\$40,000.00
New Jersey Department of Agriculture	\$839,401.90	Specialty Crop Exposure in Cross-Curricular Elementary Education	Learning Through Gardening (LTG), a program of the New Jersey Agricultural Society, will provide continued coaching and support to 20 elementary schools that have built and maintained school gardens, in order to reach additional students and teach them about agriculture in New Jersey and increase their exposure to and consumption of fresh fruits and vegetables they've grown themselves. In addition, LTG will develop at least 10 new lesson plans available to all schools involved with the program, and available online to the public, regardless of association with LTG. Finally, LTG will run a second printing of its children's book on New Jersey agriculture book (which highlights agriculture and local specialty crops) for distributions to elementary schools across New Jersey.	\$31,064.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Jersey Department of Agriculture	\$839,401.90	Trenton Farmers Market: Connecting Mercer County to New Jersey Growers Around Healthy Fresh Food	The Trenton Farmers Market, under new management after thirty-nine years, will engage multi-ethnic food insecure community members on the benefits of using WIC/FMNP/SFMNP and SNAP/EBT at the Trenton Farmers Market through multilingual direct marketing at houses of worship and food pantries, street signage, newspaper advertising, and billboards. The project will bring awareness of federal assistance benefits available at the Trenton Farmers Market and educate consumers of New Jersey's crop seasonality, food access education and nutrition information. The project also will increase redemptions of SNAP/EBT and WIC/FMNP/SFMNP vouchers at the Market.	\$39,919.00
New Jersey Department of Agriculture	\$839,401.90	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$31,388.44
New Mexico Department of Agriculture	\$612,309.23	Field Evaluation and Marketability of 15 Table Grape Varieties for New Mexico	New Mexico State University will evaluate table grape production and varietal options to enhance sustainability of small farmers, home owners and community gardens by evaluating and comparing the vineyard performance, berry composition/quality and consumer acceptance of 15 table grape varieties. Results and successful production techniques will be disseminated to stakeholders through grower field days, workshops, regional educational conferences, master gardener trainings, consumer tastings at retail venues and farmers' markets, and reports in peer reviewed journal articles, extension bulletins, newsletters and social media. The research team is comprised of experts in viticulture and horticultural fruit production with support from county cooperative extension agents and growers interested in table grape production.	\$52,818.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Mexico Department of Agriculture	\$612,309.23	Increasing Rural Farmers' Specialty Crop Sales and Competitiveness	La Semilla Food Center will increase regional rural beginning, small, mid-sized and disadvantaged partner farmers' specialty crop sales and competitiveness by providing marketing, promotion, and outreach assistance; education and technical support for application of sustainable practices of specialty crop production; production support to increase specialty crop production capacity; and food safety training and technical assistance with implementation and documentation. This support will enhance and expand food safety, growth of specialty crops, access to and consumption of specialty crops--especially in underserved communities--improve efficiency and reduce costs to farmers and enhance and improve the local economy as a result of this project's support for specialty crop production and distribution.	\$75,428.15
New Mexico Department of Agriculture	\$612,309.23	Molecular Methods for Pathogen Detection in Chile Products and Chile Processing Facility Environmental Samples	The NMSU FSL plans to use molecular techniques to rapidly identify Salmonella enterica and Listeria monocytogenes in green chile, red chile and environmental samples from processing facilities that manufacture red and green chile. We will evaluate these rapid methods against the FDA BAM procedures to determine their utility for the Chile Industry. We plan to use two rapid assays for Salmonella, (ANSR Salmonella and real time PCR for Salmonella) both of which require enrichment of the sample prior to screening. For Listeria, we plan to use ANSR Listeria and real time PCR for Listeria) for chile samples.	\$104,122.00
New Mexico Department of Agriculture	\$612,309.23	New Mexico Garlic Marketing and Advertising Initiative	The Rio Grande Artisanal Garlic Association is a group of garlic farming families that have come together in order to work towards increasing the amount of this specialty crop grown in New Mexico. This project will develop and enhance marketing infrastructure for the Rio Grande Artisanal Garlic Association, as well as for all New Mexico garlic growers, to make New Mexico garlic economically viable and competitive in the regional and national marketplace. It will do so by getting assistance with marketing, advertising, website development, branding, and packaging for the sake of establishing a solid market outlet. The project also will increase consumer demand by educating the consumer regarding planting stock, culinary garlic, and garlic-derived products while maintaining high quality standards.	\$27,329.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Mexico Department of Agriculture	\$612,309.23	New Mexico Hard Apple Cider Production & Promotion	To help revitalize interest in apple orchards, Bluefly Farms will provide harvesting, storage, pressing, and transportation services to participating orchards throughout New Mexico. The project will double its capacity to help develop and expand a new revenue outlet for previously non-marketable apples. The apples will be pressed into fresh cider that will be sold to New Mexico-based breweries for making Graff, a beer-cider hybrid and to New Mexico-based hard cider producers for making a traditional hard cider. Based on feedback from orchards and hard cider producers in 2018, the project will also help orchards diversify their apple varieties by grafting and planting the sought-after tart, cider-specific varieties that are less common in New Mexico.	\$56,300.00
New Mexico Department of Agriculture	\$612,309.23	Northwest New Mexico New Farmer Network: Connecting Beginning Farmers to Land and Resources	The Northwest New Mexico (NWNM) New Farmer Network will lead this project to address both the aging farmer crisis in our region and the increasing demand for local specialty crop products at regional markets. Coordinator would advertise the accessible land to farm business incubators across the country and to local workforce. The project aims to Increase supply of specialty crops for Farmington Grower’s Market and Farmington Food Hub by 1) identify new available farm sites and connect new farmers to these available lands; and 2) provide technical assistance, lease facilitation assistance and resource aggregation for new farmers in the region on specialty crop production and marketing.	\$158,870.39
New Mexico Department of Agriculture	\$612,309.23	The Magdalena School District’s Specialty Crop Project	The Magdalena School District’s Specialty Crop Project will increase knowledge, access, and consumption of specialty crops across the Village of Magdalena, a food desert, through the marketing and promotion and sales and distribution of produce grown by Magdalena high school students. The project aims to enhance the competitiveness of specialty crops by 1) increasing marketing, promotion, and sales within the Village of Magdalena; 2) increasing consumption; 3) increasing access and awareness; and 4) utilizing greater capacity of sustainable practices of specialty crop production.	\$88,927.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Mexico Department of Agriculture	\$612,309.23	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$48,377.78
New York State Department of Agriculture and Markets	\$1,382,486.69	1. qRT-PCR for Detecting Colletotrichum Fungi Causing Apple Bitter Rot in New York Farms and Storages	Cornell University will develop and validate a new protocol for quick, sensitive, and accurate diagnosis and quantification of species fungi from the genus Colletotrichum that cause bitter rot disease on apple fruit in NY. For this, real-time Polymerase Chain Reaction will be used and specific DNA fingerprint regions for differentiating Colletotrichum species will be found. Protocol will be validated on fruit samples from NY farms, which will allow evaluate its economic impact and issue disease control recommendations to growers for early and late season infections. This protocol addresses an increasing need of NY fruit growers for disease diagnostics, will help prevent more apple fruit losses, and improve future approaches to control bitter rot in NY.	\$99,999.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New York State Department of Agriculture and Markets	\$1,382,486.69	2. High-quality NY-adapted tomato hybrids combining enhanced Early Blight resistance & other fungal resistances to reduce disease impact & fungicide u	Cornell University researchers and grower-cooperators will produce and test high quality tomato hybrids with enhanced early blight (EB), late blight (LB) and Septoria leaf spot (SLS) resistances. Conventional hybrids require multiple fungicide sprays to control LB/SLS/EB. Initial lines with LB/SLS/EB resistances resulted in hybrids Iron Lady (2013) and Stellar (2016); however, growers needed greater EB control, since those hybrids provide good EB control on stems and fruit but not foliage. We identified a new resistance that controls EB on leaves and mapped the EB leaf resistance and transferred into a prior Cornell LB/SLS/EB line, creating new lines with enhanced EB control. The goals of this proposal are to: 1. Use the new enhanced-EB resistant lines to generate 17 experimental hybrids with optimal fungal resistances but varying for plant type, maturity, fruit size and flavor; 2. Test paired hybrids in an inoculated EB trial to determine if the enhanced EB resistance can still provide good control if it is in just one parent of a hybrid; 3. Test experimental hybrids with six NY host growers with different conditions and practices, to assess hybrid performance under commercial production and learn grower preferences; and 4. Test hybrids in replicated trials for plant and fruit traits and flavor. This project will complete, with grower input, identification of the best hybrids, and provide seed companies the information needed to rapidly commercialize high quality hybrids with optimal fungal disease control for growers in NY and elsewhere in the northeast.	\$99,989.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New York State Department of Agriculture and Markets	\$1,382,486.69	3. Harvest timing and storage conditions for the New York apples varieties, SnapDragon and RubyFrost to ensure maximum fruit quality	Cornell University researchers, Chris Watkins and Susan Brown, will investigate the effects of harvest maturity and storage technologies on the quality of NY1 (SnapDragon™) and NY2 (RubyFrost™). These apples are products of the Cornell University apple breeding program that are grown exclusively in New York. The yields of each variety were 213,000 bushels in 2018 and are anticipated increase by 50 percent to 350,000 bushels in 2019. Both varieties are challenging in that it is difficult to determine appropriate harvest dates and storage regimes, and that they are susceptible to development of external and internal disorders. Research to date has shown that fruit quality is affected by interactions between the effects of plant growth regulators used by the industry and postharvest technologies. The outcome of this project will be identification of optimal harvest indices so that the industry can harvest and store fruit in such a way that consumer satisfaction is maximized, and consumption is increased. This information is essential for the industry to ensure quality fruit in the marketplace as production volume grows. To achieve these outcomes, fruit will be harvested from major New York growing regions and stored under air and controlled atmosphere (CA) conditions. Fruit treated with plant growth regulators will be harvested at different timings and the effects of different CA conditions will be investigated. This project will yield the information necessary to ensure long term profitability, continued investment in these varieties, and quality fruits for consumers.	\$54,047.00
New York State Department of Agriculture and Markets	\$1,382,486.69	4. Protecting Onions in New York with Entomopathogenic Nematodes	Cornell University will develop methods of controlling onion maggot using entomopathogenic nematodes for biological control. Onion producers have consistently identified onion maggot as a pressing pest management challenge despite the best pesticides available. With treatment options likely to be banned in the near future, progressive growers have identified control of onion maggot with entomopathogenic nematodes as a priority area for developing methods to complement existing pesticide management.	\$98,671.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New York State Department of Agriculture and Markets	\$1,382,486.69	5. Developing Microbial Seed Treatments for NY Sod Growers for Environmentally Safe Pest Management and to Enhance the Value of Sod for NY School Group	Cornell University will develop microbial seed treatments for turfgrass seed to elevate pest resistance in sod as a means for managing turf insect pests. Our goal is to create a new value-added trait for sod producers and a much-needed pest management solution for school athletic fields and other turf end-users. The results of our work will be disseminated during turfgrass extension seminars and an electronic fact sheet.	\$95,912.00
New York State Department of Agriculture and Markets	\$1,382,486.69	6. Mitigate Honeycrisp BP by understanding early Ca distributions and rootstock-conferred resistance using novel non-destructive and high-throughput a	Cornell University will identify key variables and genes for use in apple breeding programs and for the development of measures to mitigate the financial loss caused by bitter pit disorder of apple cultivar 'Honeycrisp'. We will use novel non-destructive and high-throughput methods to understand the individual fruit gene expression and distribution of calcium and other minerals in the early phase of fruit growth, the direct linkage between bitter pit incidence and early season fruit mineral content, and the influence of rootstock selection on early season fruit mineral content. The project will be conducted over the 2020 and 2021 growing seasons.	\$98,204.00
New York State Department of Agriculture and Markets	\$1,382,486.69	7. Improving Winter High Tunnel Soil Nitrogen Management	The Cornell Vegetable Program will increase the Productivity and quality of high tunnel specialty crops, specifically tomatoes and winter spinach, and will improve the sustainability of high tunnel soils. This will be accomplished through the development of Best Management Practices for winter cover cropping and development of nitrogen recommendations for winter greens in cold soils. Research includes trialing different species of cover crops suitable for high tunnel systems and optimizing the timing of planting and incorporation of cover crops to maximize soil health benefits while minimizing the time spent out of specialty crop production. In collaboration with the Eastern NY Commercial Horticulture Team, we will conduct winter spinach trials, and identify the optimum rates and sources of nitrogen fertilizer. Results will be disseminated to growers through field days, winter conferences, social media posts, and trade publication.	\$86,551.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New York State Department of Agriculture and Markets	\$1,382,486.69	8. Advertising and Promotion of New York Specialty Crops	New York State Department of Agriculture and Markets (NYSDAM) will continue our consumer-facing marketing campaign to increase the competitiveness of NY specialty crops by increasing consumer awareness and demand. Marketing activities will be multi-channel, including production of promotional materials for use at point-of-sale locations, trade shows, and special promotional events, and purchasing strategic advertisements in radio, digital and print media. NYSDAM will also incentivize producers and retailers to develop and use packaging and point-of-sale materials designed to highlight NYS/local specialty crops through a cooperative marketing program. We will expand the campaign to additionally target industry buyers, particularly in the farm to institution marketplace. Consumer surveys will be used to determine effectiveness of marketing efforts.	\$490,000.00
New York State Department of Agriculture and Markets	\$1,382,486.69	9. On- Farm Food Safety	New York State Department of Agriculture and Markets (NYSDAM) Food Safety staff will implement this project with planning assistance provided by Cornell University. This project will continue work that previous SCBG Good Agricultural Practices (GAP) projects successfully implemented. The proposed project will promote the GAP audit as the best way to prepare for new regulatory programs and standards to be implemented under the Food Safety Modernization Act (FSMA). The program will offer producers up to a \$1,000 reimbursement incentive to obtain a GAP audit, the cost of training, and/ or GAP-required water test. An additional \$1,000 may be used toward the cost of a consultant to help prepare farm safety plans. Applicants may apply for the funds each year of the SCBG program.	\$55,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New York State Department of Agriculture and Markets	\$1,382,486.69	10. Cleaning, Sanitizing, and Sanitary Design for Small and Medium Scale Specialty Crop Growers	The Institute for Food Safety at Cornell University (IFS@CU) and the Northeast Center to Advance Food Safety at the University of Vermont will develop specialized equipment and training workshops on sanitary design of produce washing equipment that is focused on small and medium scale farms. This work builds on similar workshops for large scale growers being implemented under New York State’s 2017 SCBG project: Cleaning, Sanitizing and Sanitary Design: Helping Specialty Crop Growers Develop Effective Sanitation Programs. Understanding sanitary design and implementing sanitation programs to reduce microbial and chemical food contamination on farms and in packinghouses is essential to food safety and will help growers achieve compliance with Good Agricultural Practices (GAP) and requirements of the Food Safety and Modernization Act (FSMA). The adoption of these technologies will increase the competitiveness of specialty crops by helping growers achieve a higher level of food safety, offering the opportunity to access new markets and achieve greater efficiency in washing and packing activities.	\$99,900.00
New York State Department of Agriculture and Markets	\$1,382,486.69	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$103,762.28

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Carolina Department of Agriculture and Consumer Services	\$1,337,456.60	1. Increasing Competitiveness: Food Safety and Quality	The Carolina Farm Stewardship Association (CFSA) will assist farmers and food hubs to gain access to wholesale markets through improved technical knowledge, communication strategies, education, and system implementation. The outcomes of this project will solely enhance the competitiveness of specialty crops through Good Agricultural Practices, Good Handling Practices, and Good Manufacturing Practices, enhancing food safety. In order to meet these outcomes we will: 1) conduct 22 workshops on the following topics: Fundamentals of On-Farm Food Safety, Navigating the USDA Harmonized GAP or Harmonized GAP + Plus Audit, Strengthening Wholesale Relationships, and Building Wholesale Capacity to 440 workshop participants; and 2) provide one-on-one technical assistance on food safety program development and implementation and building wholesale capacity to fifty-six small-scale farms. This will result in 400 specialty crop growers with increased food safety knowledge and postharvest handling knowledge, 200 changes on specialty crop farms in order to prevent fresh produce contamination, 40 specialty crop growers obtaining a GAP certification, and 70 farmers who will enter new wholesale markets.	\$127,749.00
North Carolina Department of Agriculture and Consumer Services	\$1,337,456.60	2. NC GAP Program 2020	The North Carolina Department of Agriculture will reimburse up to \$900 for certification of Good Agricultural Practices through a third-party audit. The funds are to assist growers in deferment of the cost and increase the number of growers who obtain on-farm safety certifications. Passage of the Food Safety Modernization Act has required many produce growers to obtain a 3rd party audit to ensure compliance with the new law. The new Gap Plus + has become one of those audits that is accepted as a compliance for this rule. Furthermore, food safety issues have caused many companies to demand increased vigilance of their growing and harvesting practices. Major retail stores such as Wal-Mart, Lowes, Food Lion and Harris-Teeter and North Carolina Public Schools all require their produce suppliers to be GAP certified and have at least a \$2,000,000.00 insurance policy. Therefore, it is almost impossible for growers to move their produce through these market channels without GAP certification. The cost of certification is relatively high for small acre producers and it is crop specific. The cost for certification could be \$600.00 -\$1200.00, or more, per crop. This project will alleviate a portion of	\$64,800.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			this burden and help growers gain a strategic foothold and open a new marketplace for them.	
North Carolina Department of Agriculture and Consumer Services	\$1,337,456.60	3. NC Water Analysis 2020	The North Carolina Department of Agriculture will reimburse growers for the cost of water analysis, performed on produce wash and irrigation water required for a Good Agricultural Practices/Food Safety Modernization Act (FSMA) third-party audit. The funds are to assist growers in deferment of the cost and increase the number of growers who obtain on-farm safety certifications.	\$50,000.00
North Carolina Department of Agriculture and Consumer Services	\$1,337,456.60	4. Attract and Kill for Managing BMSB	The Walgenbach Lab at North Carolina State University will test attract-and-kill approaches to brown marmorated stink bug (BMSB) management in commercial apple orchards. Such methods will result in fewer broad-spectrum insecticide sprays and a possible return to sustainable Integrated Pest Management, which was common practice before the arrival of BMSB. Results will be presented at research conferences and disseminated to growers via commodity meetings, websites, and personal contact.	\$127,800.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Carolina Department of Agriculture and Consumer Services	\$1,337,456.60	5. Breeding flavorful disease resistant strawberry cultivars	<p>North Carolina State University will implement the use of marker-assisted breeding (MAB) in in the strawberry program for the first time in its history. The ultimate goal of this project is to more rapidly develop superior new varieties of strawberries that are flavorful, disease resistant, and have other desirable horticultural traits (large fruit, high yield). In conjunction with our traditional breeding methods we will add additional DNA tests and tests developed by the USDA-NIFA Funded RosBREED project. We will evaluate a representative panel of diverse strawberry germplasm in our program for fruit quality traits (peach and sherry flavors) and disease resistance to two of the most common diseases in NC (anthracnose and phytophthora). These DNA tests will enable us to speed up the breeding process by identifying plants with either positive or negative markers and determine more accurate pairing of parents or eliminating seedlings that do not have the target traits in populations. Another goal of the program will be to use a set of DNA tests called single sequence repeat (SSR) markers to fingerprint our core germplasm. The use of fingerprints will verify identities in the cases of plant mix-ups in nurseries and for future research and plant patents. Finally, we will develop a set of markers for to detect a specific type of anthracnose that is inside of the plant. The use of MAB combined with our traditional breeding program will enable us to save time and money and make our breeding efforts more efficient.</p>	\$105,609.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Carolina Department of Agriculture and Consumer Services	\$1,337,456.60	6. Comprehensive Christmas Tree Management Using Drones	In partnership, Extension Forestry in Forestry and Environmental Resources and the Center for Geospatial Analytics, both within the College of Natural Resources at NC State University will investigate the use of unmanned aerial systems (UAS, and also known as drones) to streamline Christmas tree farming operations by establishing methods to remotely measure and inventory trees, remotely detect common pests and pathogens, assess the use of drone based pesticide applications, and develop educational UAS materials for NC Christmas tree growers and ensure the knowledge transfer through hands-on instruction and workshops. Extension forestry provides research-based extension programs to diverse landowner audiences across North Carolina and has provided educational programs to Christmas tree growers for more than fifty years. The Center for Geospatial Analytics is an interdisciplinary research and teaching center focused on data-driven spatial modeling and visualization for sustainable solutions to environmental and societal challenges.	\$122,800.00
North Carolina Department of Agriculture and Consumer Services	\$1,337,456.60	7. Elongate Hemlock Scale and Fraser Fir	The Department of Forestry and Environmental Resources at North Carolina State University will conduct field, greenhouse, and laboratory studies to improve our understanding of the ecology and management of the exotic insect pest Elongate Hemlock Scale in Fraser fir Christmas trees, one of North Carolina’s most important specialty crops. Although the scale typically causes little damage to Fraser fir, its presence on Christmas trees represents an important pathway by which this insect can spread to new areas where more susceptible host species might exist. When detected on Christmas trees entering states where the scale is not yet present, local regulatory agencies intercept and destroy the infested material. This causes detriment to the revenues and reputation of North Carolina’s Christmas tree industry. The results of this research will inform management recommendations to growers for reducing scale infestations and limiting the risk of future spread via infested Fraser fir. Outcomes will be reported to stakeholders through presentations at the North Carolina Christmas Tree Association (NCCTA), articles in Limbs and Needles (the official trade magazine of the NCCTA), and papers published in the scientific literature.	\$122,800.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Carolina Department of Agriculture and Consumer Services	\$1,337,456.60	8. Heirloom-type tomato hybrids for niche-markets	<p>North Carolina State University will develop heirloom-type hybrid tomatoes suitable for local niche markets. These hybrids will be improved especially for flavor, taste, and disease resistance. It is widely believed that organic products are more nutritious than conventional. However, there are not enough data to support this claim. We will perform detailed nutrient analyses of tomatoes grown under conventional and organic conditions to determine the facts under growers' field and research field station. Consumers prefer heirloom-type tomatoes because of perceived superior flavor and desirable fruit texture. Specialty tomatoes, including yellow, orange, brown, or organically produced fruit, hold an additional attraction for consumers. Unfortunately, most heirloom varieties lack disease resistance, are often low yielding because of poor fruit set, and are highly susceptible to fruit cracking and rough blossom end scars that lead to poor shelf life and rapid decay of fruit. In the proposed study, we plan to make crosses among the best heirloom varieties, and the NCSU developed lines to create superior hybrids with combined disease resistances and improved marketable yield while maintaining desirable flavor and texture comparable to the best heirloom varieties. Based on the nutrient analyses and overall performance of the tomato varieties grown under organic conditions, best performing varieties will be introduced to the growers' field through field days, growers' meetings, field visits, websites, and social media. Development of these improved varieties will offer both conventional and organic growers of specialty type tomatoes the ability to increase production and profitability and provide consumers with a dependable supply of high quality locally grown tomatoes. We may use some of the already developed hybrids in the trial to expedite the process.</p>	\$127,796.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Carolina Department of Agriculture and Consumer Services	\$1,337,456.60	9. Hemlock Restoration in Nurseries and Landscapes	The Forest Restoration Alliance and North Carolina State University (NCSU) will lead this project to continue searching for surviving hemlocks using TreeSnap, collecting seeds and cuttings, providing a portion of the collections to private nurseries and the NC Forest Service nursery, and evaluating short-term survival of seedlings by exposure to hemlock woolly adelgid (HWA) in a screening facility as a measure of resistance to HWA. The objects of the project are 1) to determine appropriate silvicultural techniques and to evaluate the best long-term survival of hemlocks in ornamental and field plantings and the infestation rates as measures of HWA resistance; 2) to study existing hemlock cultures from open-pollinated and control-pollinated seeds; 3) to collect phenotypic data related to HWA resistance from potentially resistant and susceptible Trees; and 4) to test CRISPR-based in vivo genome editing efficiency of Hemlock SE lines using CRISPR-SpCas9, LbCpf1, and LgaCas9 in Hemlock protoplasts and embryogenic masses.	\$127,800.00
North Carolina Department of Agriculture and Consumer Services	\$1,337,456.60	10. Horizontal Planting to Improve Sweet Potato Production	This proposed project is with North Carolina (NC) State University, Department of Horticultural Science which will work closely with the NC sweet potato industry that markets and sells over \$300 million of product annually and is the top producer of sweet potatoes in the United States. The proposed outcomes revolve around the evaluation of a new mechanized horizontal sweet potato planter with the resulting primary outcome being improved sweet potato production efficiency. More specifically, we expect that the outcomes of this research will result in greater yields and more uniform root set and size, and the ability to incorporate efficient weed control when using this new planter. We plan to conduct several field research experiments on Research Stations in North Carolina, hold on-farm demonstrations and at least one field day at the Research Station to communicate and regularly update the sweet potato industry on the progress in the use of this new horizontal planter.	\$102,800.00
North Carolina Department of Agriculture and	\$1,337,456.60	11. Improving Field Production of Grafted Tomatoes	North Carolina State University (NCSU) will evaluate cultural practices for grafted tomato production coupled with an analysis of the economic viability of the practices tested. The use of grafted vegetables, including tomatoes, is	\$62,800.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Consumer Services			<p>becoming a common practice in protected agriculture production (high tunnels and greenhouses) to manage soilborne diseases, increase yields, and overcome environmental stressors; however, the use of grafted tomatoes in the field is relatively new to the southeastern US but can be economically productive. Recent research has revealed that growing practices (fertilization, irrigation, etc.) for successful production of grafted tomatoes may not be the same as with non-grafted tomato production. Pruning is standard practice on non-grafted tomato plants, but a recent study conducted by NCSU suggests that pruning reduced yield on grafted tomatoes, but this study was limited to one rootstock. We know varieties respond differently to pruning, but is this also true when they are grafted? Our objectives are to (1) evaluate the effects of pruning and non-pruning on four scion varieties commonly grown in NC on two rootstocks and (2) evaluate the cost effectiveness of these practices. Evaluations of practice adoption and cost savings will be conducted at stakeholder meetings. Results will be shared with stakeholders at field days and regional grower meetings. An extension publication also will be produced to reach a wider audience.</p>	
North Carolina Department of Agriculture and Consumer Services	\$1,337,456.60	12. Postharvest Disease Control for Export Sweet Potatoes	<p>North Carolina State University will improve postharvest disease control in sweet potatoes for export markets by evaluating registered and unregistered fungicides for efficacy in a mini packing line, determining the fungicide residue levels of products, and disseminating research results to stakeholders through web-based tools and presentations at grower meetings and field days.</p>	\$82,800.00
North Carolina Department of Agriculture and Consumer Services	\$1,337,456.60	13. Tulip and Dutch Iris Extended Storage	<p>Research conducted within the Cut Flower and Postharvest Floriculture Program at North Carolina State University will define protocols for long-term storage of the specialty cut flowers tulip and Dutch iris. This will allow these high-value crops to maintain their quality and to be sold for extended periods after harvest and will be done by 1) identifying longer-term storage conditions that preserve flower vase life; and 2) verifying that the storage conditions identified do not increase incidence or severity of diseases such as gray mold.</p>	\$44,482.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Carolina Department of Agriculture and Consumer Services	\$1,337,456.60	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$67,021.99
North Dakota Department of Agriculture	\$2,948,463.80	1. High-Throughput Phenotyping for Genetic Dissection of Aphanomyces Root Rot in Dry Peas	NDSU plant pathologists and breeders will identify partial resistance to Aphanomyces euteiches in dry pea. A. euteiches causes root rot in pea and lentil and has been detected across pulse growing regions of North Dakota. In 2017, the coordinated Pest Management Strategic Plan has identified Aphanomyces root rot as a top research priority for Pulse Crops. Partial resistance to this devastating disease has been identified; however, this work largely has been conducted using A. euteiches isolates and germplasm from France, and to a lesser extent the Pacific Northwest, USA. Evaluations of the pathogen indicate that differences exist both in genetics and disease aggressiveness across isolates from the USA, Canada and France. During this project, we will develop a high-throughput system to evaluate germplasm for reaction to A. euteiches in the greenhouse. This system will be utilized to screen germplasm from the NDSU breeding program. Results from greenhouse screening will be combined with sequencing data in a genotype-by-sequencing platform. The outcomes of this project will be the identification of genomic regions associated with resistance to A. euteiches and germplasm from the NDSU breeding program displaying partial resistance that can immediately be used to advance breeding efforts. Ultimately, although outside the scope of this project, this will lead to the development of genetic markers for ARR resistance and cultivars with partial resistance to this pathogen. Results will be disseminated by the PI's and NDSU extension professionals to dry pea growers across the state and published in a scientific journal.	\$226,888.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	\$2,948,463.80	2. Improve Detection Capacity and Resistance Evaluation for Control of Nematode Diseases in Potato	The Department of Plant Pathology at North Dakota State University will evaluate 20 potato cultivars used in the region to validate their resistance reactions to the stubby root nematode <i>Paratrichodorus allius</i> and to identify potatoes with resistance to dagger nematode that are present in potato fields in North Dakota, and develop novel, droplet digital PCR assays to detect and quantify <i>P. allius</i> from field soils and evaluate the factors associated with the droplet digital PCR quantification of <i>P. allius</i> from field soils. Results of the proposed research will help understand resistance or susceptibility of potato cultivars to the stubby root nematode and dagger nematode populations in North Dakota and improve the stubby root nematode detection and quantification accuracy and reliability in infested fields. This information is important to help growers perform risk assessment using a reliable diagnostic tool and select the validated resistant cultivars for controlling the nematode diseases to increase potato yield and quality.	\$102,026.00
North Dakota Department of Agriculture	\$2,948,463.80	3. Root Rot of Lentil: Evaluation of Crop Rotation, Biofumigation And Risk Assessment	Lentil production has been an economic boon to northwest North Dakota, but in recent years root rots have becoming increasingly problematic. Recommendations to rotate four years between lentil crops to avoid the build-up of root rot pathogens in the soil can be a challenge for many growers, as lentils may be their primary profit generating crop. The North Dakota State University Williston Research Extension Center will evaluate one, two- and three-year intervals in between lentil crops to determine the effect of these rotation lengths on root rot disease severity and yield in a no-till, dryland cropping system. Brassica cover crops, observed to reduce soil-borne disease severity in other systems, will be evaluated in this context to determine if this treatment could reduce root rot in lentils planted after the cover crop. Finally, a soil root rot potential seedling bioassay will be used to determine the effect of rotation length on root rot inoculum in the soil and these data will be correlated with yield and field root rot severity. This effort will improve root rot management and help generate more specific rotation recommendations for lentils grown in North Dakota.	\$27,875.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	\$2,948,463.80	4. Optimizing Fungicide Timing, Row Spacing, And Winter Rye for Improved Sclerotinia Management in Dry Beans	<p>The North Dakota State University Carrington Research Extension Center, in collaboration with the NDSU Robert Titus Research Farm in Oakes and the NDSU Williston Research Extension Center’s Nesson Valley Irrigation Research Site, will conduct field trials and conduct outreach to North Dakota and Minnesota dry bean producers to improve the management of white mold in dry beans. Fungicide applications in dry beans targeting white mold are often applied at bloom initiation, and dry beans are often seeded to wide rows when white mold is a concern. Preliminary findings suggest that delaying fungicide applications until full bloom sharply improves white mold control and that increased distance between plants – not distance between rows – maximizes dry bean agronomic performance under white mold pressure. This project seeks to establish multi-location field trials evaluating the impact of row spacing, seeding rate, and fungicide application timing on dry bean agronomic performance under white mold pressure. It also seeks to quantify the impact of planting dry beans into overwintered rye, terminated at or before dry bean planting, a practice that is reported to sharply reduce white mold but for which rigorous data are lacking. Testing will be conducted on pinto, kidney, navy, and black beans, with overhead irrigation applied as needed to simulate wet weather conducive for disease development. Research results will be disseminated at outreach meetings to dry bean producers in North Dakota and Minnesota, summarized in the annual research report published by the Northharvest Bean Growers Association, and posted online in a user-friendly format.</p>	\$81,767.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	\$2,948,463.80	5. Pulse Proteins: From Varieties and Processing to Structure-Function Relationships	<p>North Dakota State University will mitigate the beany flavor and negative taste of pulse proteins by mapping the flavor and taste profile of selected pulse varieties including field pea, chickpea and lentil grown in the northern plains and optimizing the isolation process. When pulse proteins are used as a functional food ingredient in food products, pulse varieties and processing can have an essential impact on end-product quality. However, there is a lack of systematic studies indicating how the pulse varieties and processing conditions have an impact on the end of use quality. In general, the bitterness and astringency of pulse proteins related to their saponin and phenolic compound contents, which strongly depend on cultivars and isolation processing. The beany flavor attributes to the activities of endogenous lipoxygenase enzymes, initiating lipid oxidation and the formation of beany volatiles. Off-flavor development in pulse harvest during storage and processing is highly dependent on the action of endogenous lipoxygenases. During protein extraction processing, the processing conditions (e.g., temperature, water activity and pH) also affect the enzyme activity. The aim of this project is to elucidate the structure-function relationships of pulse proteins to be influenced by varieties and processing. The accomplishment of this research will provide useful information not only to pulse growers to grow the varieties with premium characteristics, but also to pulse ingredient manufacturers and consumer companies.</p>	\$136,270.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	\$2,948,463.80	6. Vetting and Implementing Genomic Selection for Pea Quality Improvement	Seed quality is a major determining factor for dry pea value and marketability. No longer does the term quality merely refer to basic physical properties (seed size, color, shape) but more specialized markets are developing which require greater knowledge of seed composition (protein content, minerals). Recently, processors announced a premium paid on dry peas with more than 24 percent protein content at the 2019 Northern Pulse Grower Association Meeting. Further, dry pea has been recognized as the new heart of health foods for being incredibly rich in key minerals. Improving protein content and mineral levels have thus become important breeding objectives. In this study, plant breeders and food scientists at NDSU will test and optimize a novel breeding methodology, called 'genomic selection', to accurately select and speed-up the development of dry pea variety. Genomic selection uses the DNA information provided by high-throughput genotyping and it is heavily used for genetic improvement of plants and animals in private sectors. To our knowledge, no research has been conducted on genomic selection for improving dry pea quality. This study will fully test genomic selection and provide a giant step forward to actual implementation of genomic selection in a public breeding program, leading to faster development of higher quality dry pea varieties. This project is timely and cost-effective because phenotyping cost for seed quality is becoming more expensive than genotyping cost. The outcomes of genomic selection are accurate selection and faster development of nutritionally-enhanced dry pea cultivars with high protein content and high mineral levels.	\$203,343.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	\$2,948,463.80	7. Vine Desiccation as a Strategy to Manage Verticillium Wilt of Potato by Reducing Soil Inoculum	North Dakota State University will reduce the economic and environmental impact of Verticillium wilt of potato by identifying that period when potato vines should be desiccated to reduce pathogen inoculum production without reducing yield and quality of processed potato. Currently, the only means of controlling Verticillium wilt in French fry process potatoes is by soil fumigation which is not sustainable and environmentally unfavorable. Vine desiccation has been discontinued as a cultural practice by that portion of the potato industry involved in French fry processing in favor of allowing plants to naturally mature. This cultural practice is believed to increase yield. Previous studies performed in North Dakota demonstrated that inoculum production by the Verticillium wilt pathogen increases significantly during this period which subsequently increases disease pressure in future crops. Yield data from cultivar studies suggests there is a harvest window during mid-September, centered around the fall equinox, in which yield does not increase. The studies proposed will determine the yield of Russet Burbank under field conditions in experimental plots where vine desiccation at six weekly intervals from September 1 to October 6 are compared to the yield of plants left to senesce naturally as is the current practice. Vine desiccation halts the production of Verticillium wilt inoculum. The level of Verticillium inoculum produced in stems of Russet Burbank desiccated at six intervals will be compared that produced in stems that have senesced naturally which will demonstrate that Verticillium wilt inoculum is increasing over time while yield is not. This information will be disseminated to stakeholders through grower meetings and field days.	\$223,122.00
North Dakota Department of Agriculture	\$2,948,463.80	8. Increasing Breeding Efficiencies in Dry Bean by Using Improved Selection Tools for Cultivar Development	North Dakota State University aims to release improved dry bean cultivars more rapidly by increasing breeding efficiency in three ways: (i) developing molecular tools to assist in pyramiding common bacterial blight resistance genes, (ii) identify known and new disease resistance genes currently present within the Dry Bean Breeding Program for rust, anthracnose, and white mold to be used for Marker-Assisted Breeding (MAB) and to assist in future parental selection, and (iii) assess the potential breeding efficiency gains using MAB.	\$202,040.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	\$2,948,463.80	9. On-Farm Validation of Planting Date as a Tool for Managing Root Rot in Peas, Lentils	<p>The North Dakota State University Carrington Research Extension Center, in conjunction with the NDSU Williston Research Extension Center and the NDSU Department of Plant Pathology, will conduct on-farm studies in western North Dakota to optimize the use of planting date and seed treatment fungicides for management of root rots in field peas and lentils. Fusarium and Aphanomyces root rots are serious constraints for pea and lentil production that have caused many producers to abandon the crops on all or part of their acreage. The diseases are favored by warm soil temperatures, and data from field trials suggests that an early planting date can confer satisfactory management of the diseases. Only one university research farm in North Dakota and Montana has fields with natural, economically limiting levels of Aphanomyces and Fusarium pressure, and all data on the impact of planting date on Aphanomyces root rot have been generated from one study location. Aphanomyces is particularly economically damaging but is difficult to establish with laboratory produced inoculum. Studies evaluating the impact of planting date on Fusarium root rot have been conducted with laboratory produced pathogen inoculum. This project seeks to validate the use of planting date as a tool for managing root diseases in peas and lentils by conducting on-farm studies in fields with natural infestations of Aphanomyces and Fusarium root rot that have caused economic losses in commercial field pea and lentil production. Rigorous disease management recommendations will be developed and disseminated to stakeholders in North Dakota, Montana, and South Dakota.</p>	\$67,053.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	\$2,948,463.80	10. State-Wide Screening of Wild Oat for Herbicide Resistance	Weed resistance to herbicides is increasing and will impact specialty crop production. Weeds can adapt when the same production practices (i.e., same herbicides) are used repeatedly. Farmers growing specialty crops will benefit in the short term and long term from learning how to properly rotate herbicide chemistries and crops. No new herbicides are being developed to replace those lost to herbicide resistance. This will hurt specialty crops more than major crops. Specialty crops typically have fewer weed control options as companies focus their time and resources on higher acreage crops like corn and soybean. Understanding the types of resistance present in the field will help to plan future weed management strategies, thus helping farmers preserve and use wisely the weed control tools they currently have for specialty crops. Wild oat is one of the weeds that has shown a propensity for resistance. This project will screen about 100 wild oat populations from across the state to determine 1) how widespread is wild oat resistance, 2) to which herbicides or groups wild oat is resistant, and 3) if the pattern of resistance correlates with historical herbicide use.	\$60,207.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	\$2,948,463.80	11. Optimizing the Deployment Of Bee-Vectored Clonostachys Rosea For Managing Sclerotinia Head Rot In Confection Sunflowers	<p>The North Dakota State University Carrington Research Extension Center, in cooperation with the NDSU Langdon Research Extension Center, will conduct multi-location field trials and conduct outreach to North Dakota and Minnesota sunflower producers to improve the management of Sclerotinia head rot of confection sunflowers, a sporadic but serious disease for which no management tools are currently available. Field trials will be established to develop rigorous recommendations for the deployment of a novel disease management strategy that has conferred consistent, strong control of head rot even under severe disease pressure. In field trials conducted in Langdon and Carrington in 2016, 2017 and 2018, the use of bees to inoculate sunflower heads with strain CR7 of the fungal biological control agent <i>Clonostachys rosea</i> conferred 33 to 60 percent reductions in Sclerotinia head rot under moderate to severe disease pressure. The biological control agent is deposited with an automated dispenser on the surface over which the bees travel as they exit their hives, and the bees deposit the biological on sunflower florets as they pollinate. This project seeks to determine the spatial distribution of bee hives required to achieve satisfactory control of head rot by quantifying the distance away from bee hives that satisfactory disease control is achieved. The project will contribute to the development of rigorous recommendations for managing Sclerotinia head rot in confection sunflowers, and results will be disseminated to producers and industry stakeholders at outreach meetings, in trade publications, and with reports published online.</p>	\$75,751.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	\$2,948,463.80	12. Field to Fork: Promoting Specialty Fruits and Vegetables through Education for Adults and Children	North Dakota State University Extension specialists, faculty and staff from at least 30 counties and external partners (including Iowa State) will enhance knowledge and safe food handling of specialty fruit and vegetable crops from field to fork. This project will build upon two successful projects and will expand to include more information about herbs and dry beans. It addresses three key priorities of the North Dakota Department of Agriculture related to enhancing the competitiveness of specialty crops through increased consumption (Outcome 2); increased access (Outcome 3); and increased understanding of the ecology of threats to food safety from microbial and chemical sources (Outcome 7). The project will create new educational materials related to specialty fruits and vegetables grown in North Dakota targeting both youth and adults. Through the development of materials such as online modules, fact sheets, information releases, presentations, participants will increase their knowledge of specialty crops. Growers will increase their understanding of food safety practices and technologies. This project will offer face-to-face workshops, webinars and online module-based training for growers, small food businesses, including topics such as agricultural water, biological soil amendments, domesticated and wild animals, and worker health and hygiene. The project will increase knowledge and consumption of North Dakota specialty crops through the offering of education for children in 4-H programs and schools and farmers markets related to specialty crops. Knowledge gained and behavior changes will be evaluated using pre/post surveys.	\$63,438.00
North Dakota Department of Agriculture	\$2,948,463.80	13. Evaluation and Selection of Improved Haskap for North Dakota	The Carrington Research Extension Center (CREC) will obtain new Japanese haskap from the only haskap breeder in the U.S. Cuttings will be propagated and planted followed by evaluations to identify selections which will replace commercial varieties currently available in North Dakota and the U.S. The selections made in this project will produce a larger fruit crop with desired quality characteristics and fruit that clings well in windy conditions.	\$84,458.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	\$2,948,463.80	14. Educating Youth About Specialty Crops	<p>The North Dakota Department of Agriculture (NDDA) will create a hummus toolkit that can be used by grade school and middle school teachers to educate students on chickpea and pulse crop production in North Dakota. The hummus kits that will be created and distributed to classrooms across North Dakota are timely because the Northern Pulse Growers Association and national pulse growers' groups have identified the importance of quality food choices for consumers. These kits will introduce consumers to chickpeas and ways to eat them. The kit will consist of a small sample of chickpeas along with recipes for hummus and other dishes using chickpeas. A flash drive will have multiple resources specific to chickpea and pulse crop production in North Dakota. Specifically, one of these resources will be a PowerPoint presentation that the teacher can use. Funds from this grant will also be used to create a farm-to-fork video that will serve as both an introduction to the materials in the kits as well as a promotional piece that will be shared on NDDA digital channels to educate visitors about pulse crops in North Dakota. Teachers can use all these resources in the classroom to educate students where their food comes from by making and tasting hummus with the class. The teachers can then use the other materials in the kit to create lessons to accompany the activity.</p>	\$27,164.80

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	\$2,948,463.80	15. Creating a Predictive Framework for Cold Tolerance in North Dakota Grape Cultivars	North Dakota State University will evaluate the association between environmental cues and phenological and physiological transitions essential to viticulture performance and resilience in northern climates. Response to environmental cues varies widely across grape cultivars with large impacts to both yield and vineyard sustainability. This project aims to comprehensively assess the interaction between temperature cues, phenology, and cold hardiness across multiple growing seasons in grape cultivars. This project will systematically assess the fine-scale relationship between temperature and the induction and breakup of dormancy and dormancy-related traits for six grape cultivars replicated four times across two distinct environments (NDSU Horticulture Research Farm and a regional vineyard). NDSU will (i) monitor temperature and (ii) phenological shifts over time and (iii) estimate development of cold hardiness using both electrolytic leakage and differential thermal analysis (DTA) across cane and bud tissue between October to May 2019-2020 and July to May 2020-2021. NDSU will evaluate Ferguson et al.'s (2011, 2013) temperature-based model that predicts cold hardiness and bud break within Vitis genotypes comparing observed versus predicted values of cold hardiness and bud break. Results from this work will provide valuable information for varietal development and may be used for risk-management to predict winter injury. Data from this experiment may be incorporated into tools to identify sites with appropriate temperature conditions for select cultivar production and establish a probability of cold hardiness for grape cultivars within a region where cold damage is common.	\$105,126.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	\$2,948,463.80	16. Enhancing Rust Resistance in Confection Sunflower Production through Next-Generation Technologies	<p>The National Sunflower Association will use newly available genome sequence information for sunflower to identify diagnostic single-nucleotide polymorphism (SNP) markers tightly linked to the rust resistance genes (R genes) expanding the options for stacking resistance to obtain an enhanced, long-lasting resistance to the rust disease. Rust is a growing threat to sunflower production worldwide, leading to losses in yield and seed quality. This project will apply cutting edge genetic and genomic approaches to characterize the genetic basis for rust resistance in sunflower. With improved next generation sequencing (NGS) and the decreased cost of sequencing, it is now feasible to discover millions of SNPs for any plant and connect these markers to desirable phenotypic traits. We will use whole genome re-sequencing combining the fine mapping approach to generate high density SNP genetic maps for characterization of the rust R genes, R12, R13a, and R15, to dissect the R gene cluster, and to identify candidate genes for rust resistance. The diagnostic SNP markers linked to the rust R genes will be evaluated across a diversity panel of common breeding parents and optimized prior to public release. Project deliverables include new tools (i.e. diagnostic SNP markers) that will enable sunflower breeding programs across the US to more easily develop superior cultivars that are resistant to rust. Ultimately, these efforts will result in the development of improved rust resistant hybrids, providing a more economically sustainable solution for confection sunflower growers throughout the US and the world.</p>	\$124,050.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	\$2,948,463.80	17. Identification of Economically Important Fruit Quality Traits in Diverse Grapevine Genotypes for Elite Germplasm Development	North Dakota State University (NDSU) Grape Germplasm Enhancement Program (GCEP) will develop grapevine lines with improved fruit quality traits. We will utilize new methodologies and tools that can enhance selection efficiency. In this project, we aim to reduce generation timelines through the creation of useful selection indices and development of informative predictive correlations. Additionally, the program will join the leading global germplasm development programs in the genomic era with a goal of isolating useful molecular markers and genomic predictors guiding the selection of early ripening, low-acid grapevine selections. No U.S. grape breeding program works towards a shorter growing season than that of North Dakota, thus to breed specifically for our growers, a thorough understanding of the relationship between phenological timing and quality attributes in our germplasm material is fundamental to effective, timely selection. Significant findings will be shared with stakeholders in the grape and wine industry through grower meetings, field days, scientific publications, and eventually germplasm releases.	\$192,981.00
North Dakota Department of Agriculture	\$2,948,463.80	18. Developing Improved Practices for Fresh Yellow Potato Production in North Dakota	Over the last 10 years, the average annual growth in yellow potato shipping has increased at a rate of 9.2 percent. Because of this demand, North Dakota potato farmers are growing more yellow potatoes, however quality problems (i.e. blackspot bruise and early sprouting) have caused a up to 60 percent of potatoes to be wasted each year because they do not meet quality standards. In this project, North Dakota State University will provide testing to help develop improved management practices for fresh yellow-skinned potato production in North Dakota. Our objectives are to 1) develop information on the agronomic and storability of various yellow potato cultivars and 2) improve understanding of nutrient needs of yellow potato cultivars in North Dakota growing conditions by studying fertility rates and their effect on yield and quality. The project's focus is to overcome challenges in yellow-skinned potato production to maximize the sustainable production and value for potato growers in North Dakota. Information will be disseminated through grower meetings, publications in the Valley Potato Grower Magazine, Extension activities and through the NDSU Potato Extension website (www.ag.ndsu.edu/potatoextension).	\$71,796.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	\$2,948,463.80	19. Fall-Based Weed Control Strategies in Pulse Crops	North Dakota State University will investigate fall-based strategies to enhance weed control in pulse crops. Dry pea, lentil, and chickpea are important crops to western North Dakota and eastern Montana. Several important weeds for pulse crops are winter annuals or early-germinating spring annual weeds that can be difficult to control. The project goal is to find herbicides that will be safe to pulse crops, but will control important weeds such as horseweed, narrowleaf hawksbeard, mustard spp., kochia, and others. It is essential that these strategies allow maximum crop rotation flexibility. This project will evaluate fall-applied herbicides applied individually or as tank mixes for weed control and crop safety. The project will also monitor for possible synergistic or antagonistic herbicide combinations. This research will provide data to support future weed control recommendations or possible herbicide label changes. This research will provide guidance to farmers to minimize weed competition and maximize crop safety and yield.	\$79,361.00
North Dakota Department of Agriculture	\$2,948,463.80	20. Microvinification of Cold-Hardy Grapes	The NDSU North Central Research Extension Center near Minot, ND will continue to evaluate the 5,000 winter-hardy grape accessions. This project will focus on the microvinification (small batch wine) process and tasting evaluations of the harvested grapes. The North Central Research Extension Center near Minot, ND currently has over 4,000 grape plants, established in 2013, in a fenced area of approximately 5 acres. We continue selecting for winter hardiness and have begun collecting a more comprehensive data set, which can aid in the selection of additional favorable traits, including bud break, flowering dates, growth rates, and dormancy dates. Evaluation of early generation breeding stock can reduce the time required to release new varieties and limit ineffective and expensive cross-breeding efforts. Success of this project will be demonstrated with additional data for breeding programs, increased awareness of the program from ND citizens, and increased participation in grape and wine events.	\$28,507.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	\$2,948,463.80	21. DNA Test to Reduce False Positive Reporting of Soybean Cyst Nematodes in Edible Bean Fields	<p>The National Agricultural Genotyping Center will validate and deploy a novel DNA-based test that will help resolve current diagnostic issues of detecting soybean cyst nematode at low levels in North Dakota soils following harvest of edible beans (<i>Phaseolus vulgaris</i> L.). The National Agricultural Genotyping Center (NAGC), a not-for-profit laboratory, specializes in transforming basic, research-use DNA tests into high-throughput diagnostic tests for use by the fundamental group in agriculture, the growers. Here, we propose to: 1) improve and validate a DNA-based test for SCN that will increase specificity (i.e., confirm SCN) and quantify egg loads, 2) blindly assess the newly developed DNA-based test for SCN, and 3) provide testing to edible bean growers that may receive SCN soil results that are interpreted as false positives. The data generated from the project will provide empirical evidence on a more advanced testing option for SCN in post-harvested bean fields, reduce confusion of growers on the false positives reported from their fields, and inform growers and crop advisors on the presence of ultra-low levels of SCN to help with pro-active control options.</p>	\$188,819.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	\$2,948,463.80	22. Establishing World Markets for Upper Midwest Specialty Crops	<p>The North Dakota Trade Office will partner with Upper Midwest specialty crop companies, producers and producer associations to establish world markets for Upper Midwest specialty crops by: 1) Conducting market research to evaluate existing markets and to identify up and coming markets for pulse crops. This research will be shared with stakeholders in this project. 2) An Egypt Trade Mission and a North Dakota pavilion at the Gulfood show in Dubai in February 2020. Gulfood is the largest annual food event serving as a gateway to new and emerging markets and increasing global exposure and sales potential of Upper Midwest specialty crops. NDTO will assist 4 companies in gaining an international buying audience through meetings with potential buyers during an in-country trade mission to Egypt, immediately followed by attendance at the Gulfood show. In conjunction these events will increase awareness of Upper Midwest companies as reliable suppliers of safe specialty crops to the Middle East and North Africa Region. 3) A trade mission to Chile and the Dominican Republic to increase knowledge and market share of the Upper Midwest's specialty crop sector in these key markets. NDTO will assist up to 6 companies with introductions to pre-qualified buyers, distributors and importers of specialty crops, resulting in an increase in export sales of specialty crops to these target markets. 4) A reverse trade mission that includes an educational component and farm tours promoting regional pulse crops. Success will be measured by an increase in sales and/or volume of specialty crops.</p>	\$252,249.00
North Dakota Department of Agriculture	\$2,948,463.80	23. Vine Kill Strategies for Certified Seed Potato Production	<p>North Dakota State University will conduct replicated potato field trials (2020 and 2021) to assess vine kill treatments following application of crop mineral oils used for aphid deterrence in certified seed potato production. Following harvest and grading in 2020, samples of each treatment will be submitted for grow-out in the North Dakota State Seed Department (NDSSD) Winter Test Plot in Florida to ascertain PVY spread. A demonstration trial will also be grown each year for grower viewing and interaction during the annual Northern Plains Potato Growers Association (NPPGA) Field Day in late August near Crystal, ND.</p>	\$50,310.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	\$2,948,463.80	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$232,752.04
Ohio Department of Agriculture	\$742,223.40	1. Characterization and Management of Chestnut Blossom End Rot	The Ohio State University, Department of Plant Pathology, will identify management practices to prevent and control chestnut blossom end rot (BER) and develop an integrated disease management program that will be disseminated to growers through grower meetings and university supported field days. In order to develop an effective and integrated disease management program for BER it is critical that we gain a better understanding of the fungi causing BER, disease resistance potential, and at what stages of nut growth infections occur. By understanding the stage(s) at which infection occurs targeted cultural practices and fungicide spray programs can be developed.	\$67,872.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Ohio Department of Agriculture	\$742,223.40	2. Empowering New Apple Growers to Succeed in Ohio	Ohio State University will lead a network of experienced and beginning apple growers to develop a beginners orcharding handbook and a field prototype orchard training unit. Mentoring and empowering will enable beginning growers to enter the Ohio apple industry at an entry level scale with the best chance of success. This will help new growers achieve financial backing from investors. New apple varieties developed by the Midwest Apple Improvement Association will offer seasonal uniqueness, with the model of local apples for local markets. These high fruit quality, disease-resistant and climate adapted MAIA selections allow new growers to enter the industry by growing delicious apples that customers actively seek to purchase. A U-Pick marketing strategy will create community connection with apple consumers. Year one will be information gathering and integration resulting in the beginner's informational and orchard design template (beginners handbook). In year two, beginning orchardists will be trained using both the handbook and a field prototype beginners orchard established at OARDC, Wooster. In addition, Ohio extension educators will receive information and in-field training based on the beginner's template and prototype, designed to increase awareness of this effort to diverse clientele. This model will evolve the current Ohio apple growing system to enable/encourage generational transition, to allow successful entry of new and beginning growers, and to allow current farmers to add apples as a specialty crop. In the longer term, this effort will evolve Ohio apple growing toward sustainability of small production units to be associated with local communities.	\$84,000.00
Ohio Department of Agriculture	\$742,223.40	3. Next Generation Diagnostics for Ohio Specialty Crops	The OSU Emerging Infectious Diseases Ecology, Vegetable Pathology and Fruit Pathology programs and C. Wayne Ellet Plant and Pest Diagnostic Clinic will improve Ohio specialty crop disease diagnosis using a novel sequencing-based approach to swiftly identify plant pathogens limiting specialty crop production statewide. We will provide specialty crop growers across the state with a novel diagnostic tool (OHIO PATH ID) that allows for quick (1-2 days) and specific identification of long-standing plant and newly emerging plant diseases and rapid detection of emerging problems such as fungicide and antibiotic resistance in pathogen populations.	\$149,028.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Ohio Department of Agriculture	\$742,223.40	4. Improved Pawpaw Cultural and Post-harvest Practices Enhancing Orchard Establishment, Productivity, Fruit Quality and Marketability	An interdisciplinary team at The Ohio State University will explore and disseminate information on "Best Cultural Practices" to advance growth in the Ohio pawpaw industry by promoting successful orchard establishment, enhancing productivity in bearing orchards, and ensuring improved fruit quality and marketability. We will examine BCPs that optimize orchard establishment procedures, production efficiency in established orchards, fruit quality and marketability. We also plan a robust outreach program designed to inform established growers and nursery operators about up-to-date research findings and to educate new growers, marketers and processors about pawpaw's potential, culture and use in food products.	\$149,951.00
Ohio Department of Agriculture	\$742,223.40	5. Ohio Grown Strawberries under Controlled Environment-Towards Year-Round Local Production	The Ohio State University proposes to establish capabilities for supplying Ohio grown strawberries year-round through combining various season-extending and controlled environment agriculture technologies in addition to conventional on-season production. We will promote revenue generation for Ohio strawberry growers outside of the traditional growing season by establishing the capability to provide locally grown fresh, flavorful fruit to consumers during all months of the year. This will create a product, where there currently is none, for growers to compete against outsourced fruit from distant sources such as California and Mexico. Science-based comparative evaluations of new and existing technologies and methodologies will result in information and recommendations, disseminated through workshops, publications, and grower forums that will establish strawberry as a locally grown Ohio product continuously available to and highly demanded by consumers.	\$84,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Ohio Department of Agriculture	\$742,223.40	6. Scaling the Production, Aggregation, Distribution and Processing for Farm to Institution Procedures	Rural Action will lead a collaborative team along with project partner Appalachian Center for Economic Networks (ACEnet) to identify interest and sales opportunities for minimally processed fresh and frozen specialty crops to Appalachian Ohio institutions. During the first project year these institutions (K-12 school districts, hospitals, colleges) representing a collectively large purchasing power will be surveyed to quantify their interest and ability to purchase locally processed Ohio specialty crops. This research will then be paired with regional wholesale specialty crop sales data from food hubs to develop an equitable pricing model that is both competitively structured and accessible for institutions with lower purchasing power, as well as financially sustainable through market rate pricing for institutions with greater purchasing flexibility. In the second project year, Rural Action and ACEnet will lead the research and prototyping of minimally processed specialty crops to meet this institutional market research - priced according to year one research and individual institution budgets. Finally, in both year one and year two of the project, educational materials and technical assistance will be provided for institutional partners to build long-term understanding of and demand for Ohio specialty crops. As a result of this project, Rural Action and partners will increase specialty crop sales and consumption by reducing barriers to institutional purchasing of locally grown fruits and vegetables. Direct outcomes of this project include annual sales increases for 27 current and beginning specialty crop producers, creation of seven processed specialty crop products, and purchasing plans for eight schools and three institutions.	\$140,830.00
Ohio Department of Agriculture	\$742,223.40	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$66,435.00
Oklahoma Department of Agriculture, Food, and Forestry	\$621,172.77	Assessing Heat Tolerant Lettuces For Production In Oklahoma	Scientists at Oklahoma State University's Horticulture and Landscape Architecture. Department will combine their expertise and resources in greenhouse hydroponic plant production, field vegetable plant production and harvesting, handling and objective measurement of quality to devise systems for producing high quality lettuce into Oklahoma's summer season.	\$97,308.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oklahoma Department of Agriculture, Food, and Forestry	\$621,172.77	Compost as a Cost-Effective Heat Source for Seed Germination & Season Extension	CommonWealth Urban Farms will host a series of two interactive workshops for both agriculture students and beginning/socially disadvantaged farmers across the state of Oklahoma on how to use compost as a heat source for seed germination (in a greenhouse) and season extension (under low tunnels). The overarching goal of this educational project is to share an effective, low cost technology that will reduce start-up costs to beginning/socially disadvantaged farmers, and to provide a cost-effective, widely accessible and environmentally-friendly alternative to propane, a commonly used heat source for starting seeds in greenhouses.	\$18,750.00
Oklahoma Department of Agriculture, Food, and Forestry	\$621,172.77	Controlling Algae in Hydroponics to Increase Production	Light, nutrients, and water are needed for plant growth and are rigorously controlled in hydroponic production, but is also optimum for algae growth, which is known to reduce yields, harbor insects, clog emitters, and increase labor costs. As interest in soilless production continues to increase to meet locally-grown produce markets, control of algae is a major concern. All growers are impacted by algae no matter the size of the operation or what crops are grown. Research at Oklahoma State University will evaluate different hydrogen peroxide products, which can serve as algaecides and provides extra oxygen that promotes root growth. Algaecides are known to reduce or eliminate algae; however, limited research has looked at rates and timing of applications. This research will consist of two separate experiments.	\$61,823.45
Oklahoma Department of Agriculture, Food, and Forestry	\$621,172.77	Detection of Detrimental Viruses and Viroids in High Value Chrysanthemums in Oklahoma	Researchers at Oklahoma State University propose to determine the prevalence of detrimental viruses and viroids infecting chrysanthemums varieties (<i>Chrysanthemum L.</i> , family Asteraceae) in relevant germplasm foundational stock in Oklahoma and to select virus and viroid free plants. A catalog of these phytopathogens is missing and is needed for selecting healthy individual plants. The output of this project will set the basis for in vitro propagation of virus-free germplasm in the future and will allow developing customized broad-spectrum detection assays for chrysanthemums in OK and the U.S.	\$68,244.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oklahoma Department of Agriculture, Food, and Forestry	\$621,172.77	Development of Native & Pollinator Plants as Turfgrasses	Oklahoma State University researchers in the Dept of Horticulture and LA will evaluate the potential for native plant ground covers for use as low input turf of shaded landscapes. Plant materials will be tested under a variety of locations and environments to determine their general appearance and adaptation. The project will also identify best methods for propagation of prospective plants for greenhouse nursery production, field nursery production, or sod production. The research will create new products for Oklahoma growers in order to diversify offerings to a broad range of consumers. Results will be disseminated through field days, professional association meetings, and Extension factsheets.	\$69,496.53
Oklahoma Department of Agriculture, Food, and Forestry	\$621,172.77	Flowering Management: Minimizing the Harms Caused by Spring Freeze in Pecans	Scientists at Oklahoma State University will investigate mechanisms by which pecans can tolerate and maintain productivity when subjected to spring freezes. Spring freeze is one of the most severe problems threatening pecan bloom and production in Oklahoma.	\$91,784.00
Oklahoma Department of Agriculture, Food, and Forestry	\$621,172.77	Harvest of the Month Educational Activity Sheets	Oklahoma Ag in the Classroom and Oklahoma Farm to School will create ten "Harvest of the Month Educational Activity Sheets" to disseminate to students through classrooms, cafeterias, student events, and farmers markets. These activity sheets will promote the consumption of specialty crops grown in Oklahoma and will educate students and families about the nutritional benefits of consuming the products.	\$24,408.87
Oklahoma Department of Agriculture, Food, and Forestry	\$621,172.77	Identification of Viruses Infecting Peppers in Oklahoma and Screening for Resistant Pepper	This project at The University of Tulsa focuses on pepper viruses to determine the type of viruses infecting peppers in Oklahoma and to find possible control measures to minimize their effects on pepper yield. In Oklahoma, pepper (<i>Capsicum annuum</i> , L) crops (including bell and chili peppers) grow on more than 600 acres and contribute approximately 2 million dollars per year to the state economy. For the last several years, virus diseases have severely affected the production of pepper crops (both quality and quantity), causing the reduction of cultivated acreage.	\$87,991.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oklahoma Department of Agriculture, Food, and Forestry	\$621,172.77	Improvement of Vegetable Production and Soil Health Using Cover Crops	Researchers from Oklahoma State University will address vegetable production issues using cover crops to improve soil health and enhance yield and quality with additions of organic matter, and to evaluate soil parameters to further understand the relationship between soil health and crop production. Spinach (aboveground production) and sweet potato (belowground production) yield and quality will be evaluated to assess the effectiveness of soil management using various cover crops during the off-season. Findings of the study will be disseminated to vegetable growers using extension publications, presentations at producer meetings, and on-site field tours.	\$51,559.93
Oklahoma Department of Agriculture, Food, and Forestry	\$621,172.77	Grant Administration	To ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$49,683.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oregon Department of Agriculture	\$2,155,610.67	1. Enhancing Specialty Crop Competitiveness with Hydroponic Growing Systems	<p>The Central Oregon Veterans Ranch (COVR) will design and build a hydroponic lettuce production system and integrate it with existing veteran-centered agriculture therapy and existing veteran transition education programs. This new production system will validate the use of hydroponics for increasing specialty crop production and enhancing small farm methods while increasing Oregon’s farm workforce and benefiting veterans that are transitioning from service or suffering from combat trauma. The proposed project will convert an existing greenhouse into a hydroponic system for growing lettuce. COVR is a non-profit, 19-acre working farm/ranch that provides a unique environment focused on helping veterans heal from combat trauma and transition from military service to civilian life. Part of the healing experience is the opportunity to do meaningful and purposeful agricultural work growing crops and rearing animals. The veterans learn new skills preparing them for civilian jobs in both agriculture and other related fields. Produce and animals from the ranch are sold to local markets and profits go to support farming operations and other Ranch therapeutic programs. This project will significantly increase lettuce production and provide a classroom for training veterans preparing them for careers and jobs in farming. In addition, the hydroponic infrastructure will be offered to local universities, colleges and schools for research and studies. COVR currently has a working relationship with Oregon State University for similar programs. Data and experiences with the lettuce production will be shared statewide with farming organization and other interested entities.</p>	\$120,049.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oregon Department of Agriculture	\$2,155,610.67	2. Farm-to-Food Accelerator: Energizing growth for Oregon's Female Specialty Crop Producers	<p>The National Association of State Departments of Agriculture (NASDA) Foundation is partnering with the Oregon Department of Agriculture, Oregon State University Food Innovation Center, Washington State Department of Agriculture and Union Kitchen to develop a multi-state project to equip female specialty crop producers to grow their value-added businesses. NASDA Foundation and its partners will develop the Women’s Farm to Food Accelerator. The goal of the accelerator is to empower Oregon and Washington female specialty crop producers with food and beverage products to enter into new state and regional markets. The 90-day accelerator will provide training in product development, food safety, marketing and business development. The accelerator will include online modules, peer-to-peer learning, a women’s mentor network, and one-on-one consultations with experts. We will target female producers whose products contain at least 50 percent Oregon-grown and Washington-grown specialty crops. We will also target female producers with small operations (i.e., less than \$500,000 annual gross sales, less than 20 employees). Through this project, NASDA Foundation and its partners will train a total of 75 female specialty crop producers (30 from Oregon, 45 from Washington). After completing the accelerator, we anticipate the following outcomes: 100 percent of participating producers will increase their awareness of new markets for specialty crop products, 95 percent of participating producers will increase efficiency within their businesses as measured by the number of products reaching new markets or reduced costs, and 80 percent of participating producers will increase their sales of Oregon specialty crop value-added products.</p>	\$174,942.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oregon Department of Agriculture	\$2,155,610.67	3. Strategically Growing the Market for Oregon Craft Cider in California	Northwest Cider Association (NWCA), representing a \$300 million economic impact to the state of Oregon, proposes a project to grow the market for Oregon craft cider by hosting targeted consumer and industry focused tastings in California. NWCA, based in Portland, supports cidemakers in growing consumer demand for local, premium hard cider. Oregon is leading the nation in cider consumption, with Oregon cider synonymous with quality. However, Oregon’s market is not big enough to sustain the category growth. Despite being neighbors, California does not currently sell much Oregon-made cider, nor is California producing much cider. California’s population of 40 million people is ten times higher than Oregon and represents a huge market potential for growth for a higher quality cider coming from Oregon’s apples.	\$173,158.00
Oregon Department of Agriculture	\$2,155,610.67	4. Adopt a Farmer Statewide Expansion	Oregon Aglink will expand the Adopt a Farmer program on specialty crop farms into seven new counties in southern, central, and eastern Oregon which will double the specialty crop county engagement to a total of 14 of the state’s 36 counties. During each academic year, all farm-classroom matches across the 14 total counties in this project will have one field trip to a specialty crop farm and at least two hands-on classroom visits from their farmer who will share their production practices, careers that help their farm succeed (agronomists, beekeepers, researchers, etc.), and how their crops get to market so students, teachers and parents know where to buy Oregon specialty crops. Two career expos will also be held for middle school students in the new regions to increase student understanding of career opportunities in Oregon’s specialty crop industry. New county classrooms will be linked with current Willamette Valley county schools by means of digital resources to broaden their understanding of specialty crop production across the state. This project’s engagement with middle school students across the state will enhance the competitiveness of Oregon specialty crops through increased knowledge and consumption of a variety of specialty crops including but not limited to blueberries, cherries, peaches, garlic, onions, potatoes, and peppermint.	\$78,453.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oregon Department of Agriculture	\$2,155,610.67	5. Exploring Oregon's Specialty Crops in the Classroom	Oregon Agriculture in the Classroom will facilitate learning about Oregon's specialty crops through the development and enhancement of classroom-ready resources including curriculum, educational and promotional videos, educator workshops, virtual farm field trips and subscription-style boxes distributed to Oregon classrooms featuring Oregon's specialty crops. This proposed project will contribute to a greater understanding of specialty crops using three primary methods: curriculum and resources, events and promotion. This diversity of methods and dissemination will result in a project that build upon well-established successes and develop new innovative long-lasting resources for Oregon educators.	\$56,416.00
Oregon Department of Agriculture	\$2,155,610.67	6. Enhancing and Scaling the Oregon Hazelnut Sustainability and Stewardship Program	The Oregon Hazelnut Commission (OHC) seeks to enhance the competitiveness of the Oregon hazelnut industry through targeted outreach, education, and improved farm-level reporting capabilities for hazelnut growers designed to increase productivity through adoption of best management practices (BMPs) and identification of areas for improvement in production and pest management practices. The OHC will use funding to scale and enhance its preexisting Sustainability and Stewardship Program by upgrading and expanding its current Pilot Project implementation. Specific proposed activities include: updating grower-oriented educational materials and Workbook; updating the existing online grower education and data collection platform to include new data collection and reporting tools; conducting grower workshops to increase participation in the Sustainability and Stewardship Program; analyzing data on the implementation of BMPs; using data analyzed from the online platform to inform educational programs and incentives to increase implementation of BMPs; and, leveraging the results from the fully implemented Oregon Hazelnut Sustainability and Stewardship Program to tell the story of Oregon Hazelnuts industry practices to potential buyers.	\$166,600.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oregon Department of Agriculture	\$2,155,610.67	7. Consumer Research & Domestic Market Development for Processed Oregon Berries	The Oregon Raspberry & Blackberry Commission (ORBC) and Oregon Strawberry Commission (OSC) will obtain market knowledge via an in-depth research study and leverage this information to improve market development and access for processed Northwest berries and value-added berry products in key domestic US markets. A quantitative research study (national, 750+ respondents). This information will be used to develop data-driven educational priorities and in-market communication campaign to provide exposure to Oregon berries, better connect our farmers to consumers, and ultimately to drive sales of IQF, canned and freeze-dried berries as well as value added products outside of the traditional summer berry season. This program will serve as a best practice model to benefit future domestic market development opportunities. Program elements will include: Communication toolkit for packers and industry: presentation slides, infographic images, brochure, recipes booklet (6 – 5 ORBC, 1 OSC). In-Store educational program in the regions with the biggest market potential (4 cities selected): sampling, recipes, special displays working with a local retail partner Top food experts/local media event to engage local consumers and influencers (4 events). Supporting an in-depth social media campaign.	\$153,481.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oregon Department of Agriculture	\$2,155,610.67	8. Integrated Weed Management in Turfgrass Seed Production: Reducing Weed-Seed Contamination	<p>The goal of this project is to develop a more solid understanding of the management of turfgrass seed crop residue as an integrated weed management tool to reduce weed-seed/volunteer crop seed contamination in commercial turfgrass seed lots. Gaining this knowledge and completing the associated Extension and teaching efforts related to this research will lead to more effective, economical and sustainable weed management practices and increase the competitiveness and acceptance of Oregon turfgrass seed in domestic and international markets. To achieve these research and Extension goals, Oregon State University will evaluate the effects of crop residue on weed suppression under controlled environments and in growers' fields, perform field and laboratory experiments to understand the dynamics of weed-seed germination and how the weed seedbank changes over time with the presence or absence of crop residue, and conduct adsorption-desorption experiments in the laboratory and in the field to understand the fate of herbicides applied to the crop residue. To disseminate the knowledge obtained from this research to stakeholders and the broad scientific community, field days, e-newsletters, scientific presentations and peer-reviewed publications will be produced by the lead PI's and associated OSU faculty.</p>	\$174,608.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oregon Department of Agriculture	\$2,155,610.67	9. Promoting Sensor-Based Irrigation Management	<p>The Oregon State University (OSU) and OSU Extension service, in partnership with the University of Idaho (UI) and Oregon’s Nursery, Wine grapes, and Hazelnut growers, will enhance irrigation efficiency by 1) developing sensor-based irrigation management protocols for Oregon perennial crop production, 2) promote these protocols to the public and 3) highlight economic and environmental benefits associated with increased irrigation efficiencies. As labor shortages continue to limit production, we will enhance the competitiveness of perennial specialty crop production in Oregon by helping growers incorporate technologies that support automation and semi-automation. Our program will also improve the competitiveness of perennial crops production by creating monitoring and management systems that are more resilient to drought and heat stress. Our program will adapt viable sensor technologies developed for other production systems and modify them for Oregon’s climate to increase crop production., We expect to share the knowledge about the science-based tools we will develop with hundreds of Oregon growers each year at our Extension programs, and through our collaborator’s networks. The success of this project is high because it builds on significant infrastructure and research investment by OSU and UI. Over the past few years, the researchers and partnered growers, have pioneered investigations into new technologies to monitor crop water demand. On this solid foundation, we will build a program that will provide water-management solutions for some of the most valuable crops in Oregon.</p>	\$153,098.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oregon Department of Agriculture	\$2,155,610.67	10. Investigation of Microbiome Shift by Plant Probiotic in Strawberry Plants	Oregon is a heart of strawberries with bright red color, sweetness, juicy and exceptional taste in the United States. Many environmental factors are crucial for determining the qualities of strawberries and Oregon has optimal climate conditions for strawberry cultivation including long mild seasons (spring and summer) and rain (average 40 in) which are directly related to the taste. Although most cultivated strawberries in Oregon are processed to make jam, puree, and other processed foods, fresh strawberries are easily accessible at roadside stands or farmers' markets. In general, the strawberry has been considered a safe fruit due to high acid contents, but several foodborne illnesses were reported because strawberries are typically grown outside and can be easily contaminated by irrigation water, soil, compost, animals and humans. Recent studies have provided positive evidence in usage of plant probiotic, plant growth promoting rhizobacteria (PGPR) as a bio stimulant that increases safety and efficiency of variety of crop production. Dr. Park's group in the Department of Food Science and Technology at Oregon State University will grow strawberries supplemented with a commercial PGPR in a local strawberry farm to monitor the effects on the strawberry.	\$174,578.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oregon Department of Agriculture	\$2,155,610.67	11. Expanding Value-Added Oregon Cherry Sales Among Domestic Restaurants and Bars	Pacific Coast Producers, a farmer-owned cooperative, serves 50 Oregon cherry growers and about 20 percent of Oregon's sweet cherry crop (specialty crop) through Oregon Cherry Growers, a wholly-owned subsidiary of the cooperative. On behalf of the cherry growers it serves, Pacific Coast Producers/Oregon Cherry Growers processes Oregon sweet cherries through three cherry manufacturing facilities (one in Salem, two in The Dalles) and markets value-added Oregon cherry products through various channels, including foodservice, retail, and export markets. Through this project, Pacific Coast Producers seeks to build sales for value-added products made solely from Oregon sweet cherries in the foodservice channel, targeting restaurants and bars purchasing cherries as ingredients for cocktails and specialty beverages. Expected Measurable Outcome is to increase sales by 10 percent. Great opportunity exists to build demand in this growing market segment, especially if decision makers can be reached with information sharing the high value and versatile use of value-added Oregon cherries. Grant funding will support the following general tasks: development of marketing collateral communicating value and use of value-added Oregon sweet cherry products; attendance at trade shows reaching decision makers for restaurant and bar ingredient purchases; partnering with social media influencers to promote content and recipes using value-added Oregon sweet cherry products; and public relations efforts to generate stories in publications popular with decision makers for ingredient purchases at restaurants and bars.	\$174,943.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oregon Department of Agriculture	\$2,155,610.67	12. Fresh USA Pears Industry Video for Worldwide Distribution	Pear Bureau Northwest (PBNW) will seek to increase consumption of USA Pears / NW Pears through a global introductory and educational video telling the story of Oregon pear industry. The video will be released to the trade in 30 or more countries worldwide during trade discussions and trade shows. Additionally, the video will be shared with consumers through social media outreach in domestic markets and worldwide, as appropriate. PBNW attends four to five major international produce events, including Produce Marketing Associations Fresh Summit in the US, Canadian Produce Marketing Association, Fruit Logistica Asia and Berlin, and ANTAD in Latin America. The video will be used to tell the USA Pears story to interested buyers, potentially reaching up to 20,000 or more. Additionally, the video will be distributed to buyers world-wide in 11 languages reaching another 2,000 during the project. Finally, portions of the story will be isolated and shared via worldwide social media platforms, potentially creating another 500,000 impressions.	\$43,670.00
Oregon Department of Agriculture	\$2,155,610.67	13. Communities of Color Embrace Oregon's Specialty Crops	The Rockwood CDC and its partners will increase the consumption of specialty crops among Oregon's communities of color. Rockwood is Oregon's most diverse community, with over 100 languages spoken at home in just a two square mile area. It is also among Oregon's lowest income populations and has the worst health outcomes. In response, we: work with our neighbors to run the Sunrise Center; act as the hub for a food systems collaborative; build on the policy work in our community, Gresham's and Centennial School District's Healthy Eating, Active Living policy implementation and Federally Qualified Health Center board work, all based on the social determinants of health This program nests under the broader umbrella of our expanding Rockwood Food Systems Network: supported by community gardens, Outgrowing Hunger; black farmer's development programs; local food pantries; nutrition education from Oregon State University Extension's Food Hero and SNAP education working with limited income Oregonians; and local health clinics, Wallace Medical Concern and food as medicine Rockwood Kaiser Permanente.	\$168,165.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oregon Department of Agriculture	\$2,155,610.67	14. Growing Oregon Hazelnut Sales In Northeast Foodservice Markets	Wilco Farmers, a farmer cooperative, cooperatively owned by ~3,000 producer-owners, including 216 hazelnut growers, seeks to grow domestic sales of Oregon hazelnuts (specialty crop) by approximately 567 percent by December 2020 (see Expected Measurable Outcomes). This goal would be fulfilled by increasing awareness of and demand for Oregon hazelnuts among Northeast domestic foodservice buyers, who purchase whole, sliced, and/or diced hazelnuts to use as an ingredient in products and dishes. General tasks to accomplish this goal include: creating product exposure and promoting Oregon hazelnuts at six significant domestic food tradeshow targeting foodservice buyers; developing brochures and collateral for the tradeshow; building website resources specific to foodservice customers; a PR campaign focused on foodservice buyers; developing a digital and social media marketing campaign targeting domestic foodservice buyers; as well as placing advertisements promoting Oregon hazelnuts in foodservice publications targeting foodservice customers. Marketing messages would focus on the unique attributes of Oregon hazelnuts, including the health properties of Oregon hazelnuts as well as the uses and versatility of the specialty crop. Results would be shared with growers and project partners throughout the project period.	\$174,904.00
Oregon Department of Agriculture	\$2,155,610.67	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$169,052.28
Pennsylvania Department of Agriculture	\$1,141,923.03	1. PA Preferred Culinary Connection with Focus on Promoting Pennsylvania Specialty Crops	Strategic Contracting, Inc. will plan and coordinate the 2020 PA Preferred Culinary Connection, which delivers immediate benefits to the specialty crops organizations and the local economy in the form of increased sales and marketability of PA commercially-grown specialty crops by allowing local farmers and food suppliers to showcase their specialty crops to local consumers.	\$54,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Pennsylvania Department of Agriculture	\$1,141,923.03	2. Identifying Alternative Varieties for PA Potato Growers to Replace Round White Potatoes	Pennsylvania Co-Operative Potato Growers, Inc. will work with Penn State University, Serman Masser, Inc. and Pennsylvania potato growers, packers, and processors to identify russet potato varieties that will be productive under Pennsylvania growing conditions. Most russet potatoes in Pennsylvania's markets are being shipped here from western states. Recently, new russet varieties were released from several potato breeding programs that are reported to have some drought and heat tolerance. Many of these new russet varieties have not been tested in Pennsylvania. By evaluating these varieties in Pennsylvania, we expect to identify 2 to 3 russet potato varieties with good qualities for Pennsylvania growers. Results will be shared with stakeholders and potato growers at grower meetings and potato field days. All Pennsylvania potato growers and industry will benefit from this project.	\$112,699.00
Pennsylvania Department of Agriculture	\$1,141,923.03	3. A Harvest-Assist System for Tree Fruit Growers: Performance Analysis, Workforce Development, and Product Enhancement	The Pennsylvania State University will analyze the performance, economic impact, and technology training needs associated with the operation of a harvest-assist system for Pennsylvania tree fruit growers. The project will analyze platform performance within active Pennsylvanian orchards, evaluate the quality of the fruit compared to that harvested with manual labor, and estimate profitability for growers who adopt this technology. This work will produce training and safety materials in both English and Spanish, to ensure that the owner, operator, and harvesting crews follow best practices for maximum safety and efficiency. Young growers seeking to modernize production methods will be provided recommendations for tree training systems optimized for harvest-assist systems. And any potential engineering and ergonomic improvements discovered in this trial will be recommended to the manufacturer for continued platform development. A survey will be conducted to develop optimal harvest recommendations, suggest platform design improvements, and establish safety guidelines.	\$95,867.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Pennsylvania Department of Agriculture	\$1,141,923.03	4. Field Supply Assistance for Produce Growers Covered by the FSMA Produce Safety Rule	The Pennsylvania Department of Agriculture Bureau of Food Safety and Laboratory Services, Fruit and Vegetables Division will continue to provide support to Pennsylvania Fruit and Vegetable growers who are working toward compliance with the Food Safety Modernization Act (FSMA) Produce Safety Rule. The project objectives will be accomplished by supplying resources to help mitigate water supply and animal contamination of crops and by providing a resource to meet basic good produce handling practices.	\$49,000.00
Pennsylvania Department of Agriculture	\$1,141,923.03	5. Emerging Organisms and Tree Decline: Battling New Threats Facing the Pennsylvania Apple Industry	The Pennsylvania State University will research the relationship of plant viruses and wood-boring beetles with rapid apple decline, a mystery syndrome causing significant financial loss in grower apple orchards. The overall goals of this research are to understand the prevalence of a newly described apple virus in Pennsylvania fruit tree nurseries stock; to determine if this virus causes rapid apple decline symptoms in young, dwarf apple trees; and to evaluate the prevalence and possible role of the Ambrosia beetle, and fungi associated, in declining young apple orchards. Contribution of other pests/pathogens and/or their combination to rapid apple decline will be considered. Ultimately, mitigation strategies to avoid tree loss will include additional diagnostic tools for insect monitoring in orchards, as well as for virus certification programs for Pennsylvania fruit tree nurseries for prevention of financial loss by nursery owners, fruit producers, and consumers due to viruses. Results will be disseminated to stakeholders through grower meetings and Extension publications.	\$169,522.00
Pennsylvania Department of Agriculture	\$1,141,923.03	6. The Farm Hydroponic and Aquaponic Program for Veterans	The Farm at Greater Washington Co. Food Bank (GWCFB), with the support of Aquaculture professor Dr. Roy Weitzell at Chatham University and the veterans' training organization, Mission Homestead, will provide hydroponics and aquaponics workshops for veterans, teaching them how to raise lettuce and other specialty crops through this modern, sustainable growing method. GWCFB will offer workshops at our training center, using our own aquaponics and hydroponics systems to provide hands-on learning opportunities. Upon completion of the training program, veterans will be empowered to build and manage their own hydroponics or aquaponics systems for personal use or commercial production and will be connected with the appropriate resources	\$24,500.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			to pursue further training in growing specialty crops and/or starting their own farm business.	
Pennsylvania Department of Agriculture	\$1,141,923.03	7. The Neighborhood Food Project	Through the Neighborhood Food Project, Leadership, Education, and Farming (LEAF) will harness the energy and talents of the youth growers within our program to educate and equip their community members to grow, cook, and buy specialty crops through a youth-supported community backyard garden program. Through this program, LEAF will train youth interns in the skills necessary to site, design, and build raised bed garden plots for individuals, families, and organizations in a low-income area of Carlisle where LEAF's administrative offices are located. Our youth crew will then provide seedlings and seeds to partnering members based on their growing goals. Throughout the growing season, LEAF will provide garden support, facilitate walking garden tours, and host a community event to preserve the harvest together at a community kitchen.	\$29,211.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Pennsylvania Department of Agriculture	\$1,141,923.03	8. PA Wine Land Post: Pennsylvania Wine School	The Pennsylvania (PA) Winery Association (PWA) will enhance marketing collaborations and partnerships with industry influencers, such as grape growers, winemakers, chefs, food and wine press, and agri-tourism personalities to continue increasing awareness and sales of locally grown wine grapes and PA-produced wines. Using in-depth spokesperson model, the PWA will educate consumers on the breadth and depth of the PA Wines industry to spur readership of related web content, increase winery visitation, and increase wine sales at a retail level. The PWA will use a combination of articles, videos, and photography in multiple regions and over multiple months to cultivate the PA Wines story, culminating in a new web-based "Pennsylvania Wine School." Parallel to the development of the PA Wine School, the PWA will assemble a live "PA Wine School Tasting Panel" of real wine drinkers from different backgrounds and awareness levels at the outset and conclusion of the series to measure responses to the "School" content and influence on their buying habits for the future.	\$50,000.00
Pennsylvania Department of Agriculture	\$1,141,923.03	9. Food Safety Modernization Act (FSMA) Training and Compliance Education for Small and Mid-Sized Growers in PA	Penn State University will provide mandatory training and compliance assistance for growers who need to comply with food safety regulations and to meet buyer demand. This will be done through mandatory FSMA trainings, mock inspection meetings, and on- farm readiness reviews. Meetings will also be provided for the growing "plain" community farmers as well as Hispanic farmers and workers.	\$81,103.00
Pennsylvania Department of Agriculture	\$1,141,923.03	10. PA Vegetable Promotion Planning	The Pennsylvania Vegetable Marketing and Research Program will develop a five-year marketing plan for the promotion of Pennsylvania-grown vegetables focusing on enhancing its on-going August is Pennsylvania Produce Month promotion and will begin implementing that five-year plan in 2020.	\$25,000.00
Pennsylvania Department of Agriculture	\$1,141,923.03	11. Impact of Management Practices on Winter Squash Yield and Post-Harvest Nutrient Density	Rodale Institute will evaluate the impact of management practices in conventional and organic production systems on soil health and develop correlations between soil health and post-harvest yield and nutrient quality in winter squash.	\$134,871.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Pennsylvania Department of Agriculture	\$1,141,923.03	12. Advanced Training Topics for Vegetable Farm Managers	This project will develop advanced technical instruction for Pennsylvania Alternate System of Assessment's (PASA) Diversified Vegetable Apprenticeship (DVA) and help prepare a new generation for successful careers as specialty crop producers. The DVA is a formal, registered apprenticeship program that offers a structured education for beginning farmers, while providing experienced master growers with access to a pool of motivated employees and qualified managers. Through this grant, PASA will improve the DVA curriculum by developing short courses on advanced technical topics that are not easy to learn on-the-job, including integrated pest management, employee management, farm and tractor safety, pack house management, and small engine repair.	\$92,159.00
Pennsylvania Department of Agriculture	\$1,141,923.03	13. Growing Health Care Demand for Local Produce in Pennsylvania	Health Care Without Harm will increase sales of Pennsylvania grown produce to health care facilities in southwestern Pennsylvania and increase access to Pennsylvania grown produce to community members through farmers markets and community supported agriculture programs. Through this work we anticipate that three facilities will begin purchasing local produce through their food service operations and four will increase access to local produce through employee wellness and community health endeavors. As a result of this work we expect at least 20 fruit and vegetable farmers will have new sales; 30,000 employees, patients, visitors, and community members will receive education about the benefits of local produce; and 2,000 staff members and community members will purchase local produce.	\$128,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Pennsylvania Department of Agriculture	\$1,141,923.03	14. Specialty Crop Market Opportunities Selling to Wholesale Buyers' Individual Store Location	Through the Specialty Crop Market Opportunities Selling to Wholesale Buyers' Individual Store Locations project PA Farm Link will develop tools to assist specialty crop producers in taking advantage of wholesale market opportunities. 30 wholesale buyers will be interviewed who intend to access specialty crops from individual specialty crop farmers. Wholesale buying requirements will be assembled into a spreadsheet. A tool box of resources that assist farmers in meeting the criteria to market their specialty crops to the buyers will also be developed. 200 specialty crop producers will receive the wholesale buyer spreadsheet at trade shows, events, and meetings. The spreadsheet will be posted online, available 24/7 to Pennsylvania Specialty Crop producers. 150 specialty crop producers will receive the Tool Box of resources. 20 specialty crop producers will select at least one company from the spreadsheet that is a market opportunity for their farm.	\$20,000.00
Pennsylvania Department of Agriculture	\$1,141,923.03	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$75,649.31
Puerto Rico Department of Agriculture	\$521,850.54	Capacity building in coffee roasting and cup quality	The Puerto Rico Department of Agriculture (PRDA) will lead this project to develop the CQI's Q Coffee System, a program recognized for evaluating the quality of the coffee cup using a standard system developed by the Specialty Coffee Association of America (SCAA), aiming to improve the quality of the coffee grown on the island appealing specialize resources in this industry as Q-Graders and as experts in coffee roasting. The objectives of this project are to 1) increase the technical knowledge of professionals in the coffee industry; 2) enhance growers' technology for determining the quality of coffee; and 3) develop a common verbal and sensory vocabulary to expand grower's coffee knowledge and be able to communicate with international terms for coffee descriptions.	\$35,440.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Puerto Rico Department of Agriculture	\$521,850.54	Development of Exotic Fruit Crops in The Central Mountainous Region of Puerto Rico	The Puerto Rico Department of Agriculture (PRDA) will lead this project to develop exotic fruit plantings in the agricultural region of Utuado, as a continuous effort on diversifying central mountainous region crops. PRDA plans to establish the exotic fruit production to a commercial scale and to help the development of new agro-business. PRDA will train interested farmers to develop commercial plantings, specifically in the cultivation of strawberries, guava, mangosteen and breadfruit. PRDA will also Diversify the offer of exotic fruit crops and increase sales of fruits for the benefit of farmers.	\$79,400.00
Puerto Rico Department of Agriculture	\$521,850.54	Enhancing Competitiveness of Specialty Crops by Increasing Consumption, Access, and Awareness	Corporación Juvenil para el Desarrollo de Comunidades Sostenibles (CJDCS) will lead this project to educate, inspire, and empower students, teachers, and local community members by providing knowledge of the health benefits and advantages of growing and consuming high-quality specialty fruits and vegetables while learning how to farm, especially for young people from socioeconomically disadvantaged communities. The desired outcomes will be accomplished through the following three steps: 1) develop model gardens in five schools; 2) conduct nutritional-based educational workshops that will include nutritional fact sheets of the vegetables they will be farming and learning how to prepare them; 3) perform culinary workshops by local chefs using locally grown specialty crops.	\$26,998.86
Puerto Rico Department of Agriculture	\$521,850.54	Increase Market Competitiveness for Specialty Crop Products Cultivated in Puerto Rico by Aggressive Marketing and Promotion Strategies Within Puerto Rico	The Puerto Rico Department of Agriculture (PRDA) and the Innovation Fund for Agricultural Development (FIDA) will lead this project to sponsor and organize various efforts to expose the farmers to the end users of their products and the consumers through interact and communicate directly with wholesalers and retailers without the need of an intermediary. The PRDA and FIDA will 1) provide additional opportunities to specialty crop producers for participation in collective promotion activities in Puerto Rico such as trade fairs, events, and conventions; 2) increase awareness in local buyers' agents within the food distribution channel, to incentivize local production; and 3) assist growers with access to direct negotiations and business agreements directly with wholesalers and retailers, and owners/chefs of restaurants.	\$137,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Puerto Rico Department of Agriculture	\$521,850.54	Increasing the competitiveness of locally produced Medicinal Herbs through education and processing activities.	E & D Herbs Medicine Natural Products will lead this project to promote competitiveness in the market and the increase of local agricultural companies of production and marketing of herbal tinctures. The current processing operation of herbal tinctures in Puerto Rico is artisanal and needs to be more technologically efficient. To be more competitive, companies must add value to their crops while also influencing other people to establish agricultural companies aimed at specialty crops. This project will improve the competitiveness by providing new technology to enhance the nutritional value and consumer acceptance of Medicinal Herbs. E & D Herbs Medicine Natural Products will also educate beginning farmers with limited resources about the economic importance of production and marketing of herbal tinctures.	\$27,000.00
Puerto Rico Department of Agriculture	\$521,850.54	International Events for Capacity Building and to Gain Marketing Access for Specialty Crop Producers	The Puerto Rico Department of Agriculture (PRDA) will lead this project to provide additional opportunities to specialty crop producers for participation in promotion activities within the United States and other Countries. The promotion policy for agricultural products aims at increasing the level of awareness among consumers about the merits of local specialty crop products, in the international market, and to develop and open new markets. The effort will be directed to new beginning farmers, and farmers with potential to expand, gaining market share for specialty crop local products within Puerto Rico's own market as well as the international market, in an environment that encourages sustainable growth and development in the agricultural sector and help producers and exporters of agricultural products overcome the obstacles.	\$97,390.20
Puerto Rico Department of Agriculture	\$521,850.54	Re-establishing Vanilla Farming in Puerto Rico, With an Agrotourism Focus	Vainilla Castañer, LLC (VC) will lead this project to provide plants and incentives to help increase the number of affiliated farms that grow vanilla while also promote agrotourism. The outcomes will be accomplished by the following three perspectives: 1) incentivize farmers to grow vanilla with VC by offering technical and agrotourism support; 2) produce and distribute a practical technical manual on vanilla cultivation, pollination and pests and diseases, adapted to the needs of growers in Puerto Rico; and 3) Document project achievements through photos, videos, social media and metrics. An	\$27,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			instruction manual will be developed on how to grow and harvest vanilla in Puerto Rico.	
Puerto Rico Department of Agriculture	\$521,850.54	Research to improve banana crops through the integration of new varieties	Jose V. Fabre Laboy will lead this project to conduct a research for the development and implementation of the new varieties of banana (<i>Musa sapientum</i>) This research seeks to find a feasible alternative for producers and help some of the few self-sufficient agro business in the island obtain convenient varieties of bananas according to their climatic condition and production needs. The objective of this project is to evaluate the profitability of these banana varieties, the resistance of them to the sigatoka fungus and nematodes in different climatic conditions. The tasks that will be carried out in this investigation are: monthly tests to determine the behavior of the crops.	\$26,909.75
Puerto Rico Department of Agriculture	\$521,850.54	Specialty Crops for Everyone	Al Sol de Hoy, Inc. will lead this project to increase the production of fruits and specialty crops to improve the retention and creation of farm jobs that contribute to local economic and social development by reinforcing the existing delivery systems of technological process and applications; increasing the total number of consumers that reported an intention to access/produce/prepare and/or preserve specialty crops; and increasing the total number of habitat acres established and dedicated for mutual benefit of pollinators and specialty crops. The project aims to offer 650 seeds, plants and trees (100 guava, 100 passion fruit, 100 papaya, 100 lemon, 100 orange, 50 grapefruit, 50 melons, and 50 breadfruit) to fifteen (15) beginning and socially disadvantaged farmers; and enforce the promotion and marketing of products to ensure equally access, food safety and sustainability.	\$27,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Puerto Rico Department of Agriculture	\$521,850.54	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$37,577.29
Rhode Island Division of Agriculture	\$275,556.73	1. Developing a Locally Adapted System for Organic Hop and Rhizomatic Crop Production and Farmer Training	Southside Community Land Trust will lead an effort to develop two research and training farm yards for rhizomatic crops, one at University of Rhode Island (URI) and one at Urban Edge Farm (UEF). Over the course of the project, we will implement trials and training for organic production of two specialty crops beginning with hops in 2020. URI will set aside a half acre farmyard to implement variety trials to determine what hop varieties grow best here, and how to optimize production. At UEF, we will develop a training space where farmers can learn how to grow rhizomatous food crops. We propose to work directly with the brewery industry and developing farmers to build a system which streamlines the production of these crops and links farmers directly to buyers. At the end of the project, the UEF hop yard will be leased to one of the beginning farmers to continue production and sales independently. In year two, a second crop will be selected based on input from participating farmers but will also be a high value, rhizomatic crop with significant demand in Rhode Island's diverse ethnic communities who reside in South Providence, Central Falls and Pawtucket. It is likely to be either Ginger or Turmeric. This crop will also undergo trials at URI and production demonstrations at UEF. We will work directly with up to four beginning farmers throughout the development of the project and will offer four training sessions for up to 50 additional beginning or aspiring farmers.	\$37,474.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Rhode Island Division of Agriculture	\$275,556.73	2. Promotion of Saffron as an Extremely High Value Crop for Rhode Island Agriculture	<p>The University of Rhode Island (URI) Saffron Program, housed in the Department of Plant Sciences and Entomology, has been studying the feasibility of commercial production of saffron in Rhode Island. Saffron, the dried stigmas of <i>Crocus sativus</i>, is the world's most expensive spice, selling for more than \$5000 per pound wholesale. Initial tests have shown that saffron crocus grow well in Rhode Island. We proposal to expand our program and introduce RI farmers to saffron production by 1) Hosting a Saffron Conference in RI to introduce farmers in southern New England to saffron production. 2) Conducting replicated, controlled field trials at URI to determine the best way to manage saffron during the summer dormant season. Trials will compare bare ground, mulching, co-cultivation with leafy greens and annual cropping. 3) Providing technical support and training to RI farmers interested in adopting saffron production. We believe farmers can increase their revenues by planting saffron. Saffron is a perennial fall-blooming crop, and the flowers are the harvested portion. The plants grow from November through June and are dormant July through September. Saffron production would increase resilience to unpredictable Spring weather and could serve as a long term "sod crop" in rotation with vegetables, building soil health while still producing revenues comparable to those from intensive vegetable production.</p>	\$49,942.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Rhode Island Division of Agriculture	\$275,556.73	3. Training and Support of Organic Methods on Specialty Crop Farms	Specialty crops that are certified organic or grown with organic methods are in demand and command a higher price in the marketplace. Northeast Organic Farming Association of Rhode Island (NOFA/RI) seeks to enhance the competitiveness of specialty crops by providing training and outreach to farmers in the use of organic methods and assisting farmers in certifying their crops as organic or transitioning to organic practices. In addition, this project seeks to provide outreach to raise consumer awareness on the benefits of buying and consuming a diet rich in specialty crops free from chemicals, thus supporting both the demand for and the production of organic specialty crops. This project builds on existing successful efforts and project activities will include: a farmer advisor program, a range of education events with an Advanced Growers Seminar (AGS), a series of on-farm workshops (OFW) to demonstrate organic techniques, and an Organic Farming Educational Conference (OFEC). This project will continue outreach elements including but not limited to online resources, direct consumer engagement at agricultural venues, and providing information for both farmers and consumers on the benefits of organic specialty crops.	\$32,975.00
Rhode Island Division of Agriculture	\$275,556.73	4. Farmers in the Garden, Chefs in the Classroom: Bringing Farm to School Stakeholders to the Table for Increased Specialty Crop Awareness and Consumption	Farm Fresh Rhode Island will build awareness and consumption of locally grown specialty crops through cafeteria, classroom and kitchen training sessions for students, teachers and staff. The sessions, conducted by Farm Fresh staff with farmers and chefs, will provide hands-on, experiential education opportunities for Rhode Island student, teachers and school staff; tied to school programming, reinforcing agricultural and food literacy. Through this grant, Rhode Island Farm to School will be able to strengthen the relationship between school communities and local by providing hands-on, experiential educational opportunities and training, as well as technical assistance and training to school nutrition professionals to their knowledge and use of locally grown specialty crops.	\$50,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Rhode Island Division of Agriculture	\$275,556.73	5. Get Fresh Buy Local Marketing Improvement Program	The Rhode Island Division of Agriculture will also use Specialty Crop Grant Funds to enhance its marketing program by making point of purchase advertising material available to farmers such as price cards and logo material stating Get Fresh Buy Local Tomatoes. Is to increase sales for Specialty Crops by expanding our marketing efforts throughout the State of Rhode Island for RI Grown Tomatoes. This will allow potentially thousands of dollars from customers to be spent on RI Grown Tomatoes. We will monitor our sales through the data collected by the New England Agricultural Statistic Service. The problem we are addressing is the loss of farmland to development. With the high cost of property in Rhode Island the development pressure is increasing. We are attempting to keep Specialty Crop Farmers farming buy helping in marketing efforts to increase sales on a yearly basis. By doing this we make farming viable in Rhode Island.	\$105,127.72
South Carolina Department of Agriculture	\$543,751.38	Are the Gummy Stem Blight Fungi in South Carolina Becoming Resistant to Tebuconazole?	Clemson University will improve disease control for watermelon growers by determining the frequency and level of resistance to DMI fungicides in the gummy stem blight fungi and educating stakeholders at grower meetings.	\$44,309.00
South Carolina Department of Agriculture	\$543,751.38	Assessing the Impact of the Certified South Carolina Grown Program for Specialty Crops in South Carolina	The South Carolina Department of Agriculture, in coordination with the University of South Carolina, will conduct an analysis of the Certified South Carolina Grown program to determine the economic impact and return on investment for specialty crops branded under this program. The project's objectives are to develop a study that analyzes the current specialty crop industry under the Certified South Carolina Grown program and determine how to improve the program's impact in the future to grow the specialty crop industry in South Carolina. These results will then be disseminated to specialty crop farmers and associated organizations to share data about the program's impact. This project is expected to enhance the competitiveness of specialty crops through enhancing the economy.	\$55,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
South Carolina Department of Agriculture	\$543,751.38	Detecting and Managing the Hypervirulent Nematode <i>Meloidogyne Enterlobii</i> on Sweet Potato and Pepper in South Carolina	Clemson University and the USDA, ARS, U.S. Vegetable Laboratory in Charleston, SC will determine the extent of the distribution of <i>Meloidogyne enterlobii</i> in South Carolina, especially in sweet potato and pepper fields. Impacts on crop yield and quality will be measured in infested fields. Greenhouse studies will identify the relative susceptibility and resistance of selected sweetpotato and pepper plant introductions. Proposed control measures will include a program to monitor transplants of both crops to insure the pathogen will not spread or damage new crops.	\$44,974.00
South Carolina Department of Agriculture	\$543,751.38	Developing strategies to improve management of bacterial diseases in South Carolina peach orchards	Bacterial spot and bacterial canker are two major diseases that cause significant annual losses in South Carolina peach production. Management of these two diseases is very challenging, due to the susceptibility in most of the peach cultivars and limited options for cultural or chemical control practices. To improve management of these two diseases, Clemson University will develop new cultural, chemical, and/or biological control strategies that could provide immediate solutions for growers. The new control strategies will target disease prevention, by eliminating the inoculum sources for bacterial spot and blocking the pathogen entry for bacterial canker on peach trees, before the growing season begins. These new strategies will be evaluated on inoculum quantity, disease incidence and severity, overall tree health, and fruit yield in the following growing season. Results will be communicated to peach growers in South Carolina through Extension meetings, publications, and field days.	\$30,500.00
South Carolina Department of Agriculture	\$543,751.38	Expanding Market Opportunities for Small Growers through a Cold Storage Cost Share Program	The South Carolina Department of Agriculture (SCDA) and SC Specialty Crop Growers Association is seeking funds to administer a program for small and medium sized specialty crop growers. This project will provide funding for a cost share reimbursement program for cold storage modification units. Specialty crop growers who build a CoolBot cold storage unit may request up to \$750 to reimburse the cost of this on farm enhancement. This project will not only enable smaller growers to obtain a larger share of the marketplace, but also create a safer fresh produce supply maintaining the cold chain.	\$10,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
South Carolina Department of Agriculture	\$543,751.38	GrowFood Carolina: Increasing specialty crops in South Carolina by staying ahead of grower demand	GrowFood Carolina, a program of the nonprofit organization Coastal Conservation League, will increase specialty crop production with small farmers across the state by 1) providing essential services including crop planning, facilitating food safety/post-harvest handling, training, and market diversification; 2) ensuring no specialty crop growers' sales are limited due to lack of warehouse capacity by expanding short-term cold storage; and 3) finding solutions to looming structural capacity issues to meet specialty crop growers' needs into the future.	\$46,320.00
South Carolina Department of Agriculture	\$543,751.38	Improving Access to Specialty Crops in Spartanburg County through Mobile Markets	The Hub City Farmers' Market (HCFM) utilizes a variety of programs in order to increase the access, supply and demand of healthy local food in Spartanburg County. HCFM's Mobile Market does this especially well by acting as a traveling grocery store, purchasing specialty crops from local farmers and then reselling them at 400+ stops/year at businesses, community centers, schools, neighborhoods, and events across Spartanburg County. This project continues to address several key issues that are prominent in Spartanburg County: creating better access to healthy, local food, particularly in areas considered food deserts, and increasing sales of specialty crops to the local SNAP population; improving health outcomes in Spartanburg; and providing economic stability for local farmers and encouraging greater production of specialty crops, especially for emerging farmers. While the problem is still the same, over the years HCFM has developed direct-targeted strategies to solve these issues in different ways.	\$36,224.33
South Carolina Department of Agriculture	\$543,751.38	Increasing the Capacity of Specialty Crop Producers to Access Local Markets	The Carolina Farm Stewardship Association will provide training to 180 farmers (9 workshops with 20 attendees) and one-on-one outreach to 21 farmers. We will provide some form of training to 201 specialty crop producers total. Of the specialty crop producers receiving training, 100 will adopt recommended practices, 40 will increase high tunnel production, 10 will report an increase in revenue expressed in dollars, and 500 acres (100 specialty crop producers making recommended production changes on an average of five acres per farm) will be under best management practices.	\$43,234.22

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
South Carolina Department of Agriculture	\$543,751.38	Managing Cercospora leaf spot on beet greens with tolerant cultivars and conventional and organic fungicides	Clemson University will improve control of Cercospora leaf spot on beet greens by determining which cultivar and fungicide combinations increase yield of healthy leaves and will educate stakeholders on the findings at grower meetings.	\$21,599.00
South Carolina Department of Agriculture	\$543,751.38	Social Media Campaign to Promote South Carolina Grown Specialty Crops and Increase Consumption	The South Carolina Department of Agriculture will conduct a social media marketing campaign focused on promoting specialty crops grown in South Carolina, which will increase awareness and sales of specialty crops. The social media campaign will consist of targeted posts and marketing across SCDA associated social media pages highlighting specialty crops as they come into season, recipes and tips on how to prepare the crops, and where consumers can purchase them. Engagement with the campaign as well as selected NASS survey data will be monitored to track the expected increase in sales and consumer awareness from the project.	\$66,820.00
South Carolina Department of Agriculture	\$543,751.38	South Carolina Peach Promotion and Consumer Education through Website Improvement	Working alongside the South Carolina Department of Agriculture (SCDA), the South Carolina Peach Council (SCPC) requests funds for developing a new website to educate consumers regarding access, health benefits, and handling of peaches. SCPC is an association of growers, packers, researchers, allied industry, and produce buyers who seek to protect and advance the production and marketing of peaches in South Carolina. This new website will educate families across the nation about why South Carolina is the “Tastier Peach State” as well as encourage greater consumption of SC grown peaches.	\$37,250.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
South Carolina Department of Agriculture	\$543,751.38	South Carolina Watermelon Promotion and Consumer Education through Website Development	Working alongside the South Carolina Department of Agriculture (SCDA), the South Carolina Watermelon Association (SCWA) requests funds for promotion and consumer education as it relates to South Carolina grown watermelons through the development of a new website. By utilizing scientifically proven data that supports such messages as the “Watermelon Fuels Athletes” slogan trademarked by the SCWA, educating consumers on the health benefits of consuming South Carolina grown watermelons will provide increased sales and financial support and stability to rural South Carolina communities. By effectively relaying this message to consumers, the association’s goal is to promote healthy, sustainable eating habits while helping to continue the growth of agribusiness in rural South Carolina. The newly created website will also provide a central location to direct consumers for purchasing locations, safe handling techniques and recipes for consuming more watermelon.	\$37,250.00
South Carolina Department of Agriculture	\$543,751.38	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$70,156.62
South Dakota Department of Agriculture	\$342,909.90	2020 South Dakota State Fair Wine Pavilion	The South Dakota State Fair, a division of the South Dakota Department of Agriculture, is seeking grant funds to ensure the continued success and operation of the South Dakota State Fair Wine Pavilion. The South Dakota State Fair Wine Pavilion brings tremendous added value to the State Fair experience as well as allows for South Dakota wineries, breweries and distilleries to showcase their products and where consumers can taste and sample South Dakota wines, beers, and spirits. South Dakota’s wine industry is growing, but it still only accounts for 7 percent of the market of all wine sold in South Dakota. In a survey done at the 2012 South Dakota State Fair Wine Pavilion, consumers stated that taste, price, and source of the fruit/grape were important factors when choosing a bottle of wine. This project would meet all three of those needs by allowing consumers to taste the wine before they buy, offer a variety of price points, and showcase wines made from South Dakota grapes and fruit.	\$21,592.35

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
South Dakota Department of Agriculture	\$342,909.90	EAT, SD (Education and Training in Sustainability and Development)	Western Dakota Tech recently took first place in the National Science Foundation’s 2018 Community College Innovation Challenge. In this project, aquaponics, a combination of hydroponics and aquaculture, was integrated into the technical training in Electrical Trades with the overarching goal of solving world hunger. The natural symbiotic and cyclical processes within aquaponics allow for cutting-edge electrical process control. Our system integrates advanced electrical automation technology giving students hands-on training using a real-world application. As a continuation of this success, we propose expanding our current project, EAT, SD. For this expansion, a controlled environment agriculture facility will be implemented by Western Dakota Tech to increase both specialty crop production yields and awareness of locally-sourced commodities.	\$50,000.00
South Dakota Department of Agriculture	\$342,909.90	Food as a Relative: Welcoming Fresh Produce into the Home	The REDCO Food Sovereignty Initiative will increase the amount of specialty crops purchased and consumed on the Rosebud Indian Reservation by launching a marketing and educational campaign for specialty crops that will help overcome community barriers to accessibility. As a result of this project, we anticipate that adults and children on Rosebud will have increased knowledge of and familiarity with a variety of specialty crops. In order to achieve the proposed outcomes, we will undertake a variety of activities, including developing and distributing educational materials on preparing, cooking, storing, and preserving specialty crops; conducting community cooking demonstrations at farmers’ markets, grocery stores, and other venues; and hosting hands-on workshops open to community members such as harvesting events, garden workdays, canning and other food preservation workshops, all designed to increase familiarity and comfort with specialty crops.	\$37,772.71

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
South Dakota Department of Agriculture	\$342,909.90	Growing Healthier Lakota Youth by Increasing Natural Foods Knowledge & Consumption	With the Winyan Toka Win Garden as our foundation and bounty, the Cheyenne River Youth Project will increase Lakota teen’s knowledge and consumption of fresh fruits and vegetables by engaging them in Food Sovereignty and Social Enterprise Internships that provide intensive and hands on opportunities to learn about healthy eating through gardening, cooking and learning to make smart nutrition choices. We will also launch the new Keya Food Truck to offer our community an additional healthy breakfast and lunch option, and it will provide a second location for our Leading Lady Farm Stand, increasing access to our youth and home-grown vegetables.	\$29,924.00
South Dakota Department of Agriculture	\$342,909.90	Project Fresh	The Heart of the Whetstone Valley Horizons will expand the production and increase the sales of fresh produce in an effort to improve healthy eating habits and improve the economy of the producers of specialty crops. It will also convey the knowledge that fresh produce is available for local menus whether it be in school, care centers, restaurants, or grocery stores. There is a need for schools, grocery stores, care centers, restaurants, and others to purchase fresh fruits and vegetables to serve their clients, but they do not have the knowledge of the availability of this produce to meet this need. Therefore, this grant money will be used to bridge that gap and educate the consumer on the importance of eating healthy homegrown produce so we can oversee such health issues like obesity, diabetes, and heart concerns.	\$16,205.00
South Dakota Department of Agriculture	\$342,909.90	SDSPA Develops Marketing Plan to Increase Sales & Consumption of Specialty Crops in South Dakota	South Dakota Specialty Producers Association (SDSPA) will develop and implement an organizational marketing plan to assist producers increase sales and increase the consumption of specialty crops and local food through marketing strategies, and training opportunities. A marketing plan will be developed to address needs of producers, and to educate stakeholders, consumers, chefs, partners, and physicians about the benefits of local food. Outreach will also target students and potential growers. SDSPA members will participate in statewide events that promote specialty crop and local food production such as the SD Tourism Conference, Ag Fest, SD Ag Summit, and the State Fair Value-Added Ag Day, and similar events.	\$111,211.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
South Dakota Department of Agriculture	\$342,909.90	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$20,300.00
Tennessee Department of Agriculture	\$534,973.15	Characterizing Phytophthora blight of Cucurbits and Peppers in Tennessee for Improved Disease Management	The University of Tennessee will lead this project to improve management of Phytophthora blight of vegetable crops by evaluating disease distribution within the state, increasing understanding of pathogen biology, and assessing pathogen fungicide sensitivity. The study aims to expand the collection of P. capsici from vegetable fields across Tennessee, as well as produce markets, during two consecutive growing seasons; perform mating-type assays on each isolate to determine the prevalence of sexually-reproducing overwintering populations; test all isolates for sensitivity to the selected fungicides, and Survey and shared results with growers to quantify adoption rate of best management practices.	\$49,946.00
Tennessee Department of Agriculture	\$534,973.15	Combatting Honey Bee Devastation by Controlling Insects & Diseases in Tennessee through Technological Innovations.	The Center for Environmental Biotechnology at the University of Tennessee Knoxville will establish an agreement or contractual relationship with the State Department of Agriculture to lead and execute a project for new efforts to combat honey bee devastation in Tennessee and beyond. We will test, study, and implement technological innovations to reduce, or eliminate, small hive beetles outside the hive, in an effort to reduce colony stress and the burden of disease inside the hive. We will also use observations, innovations, and scientifically-based practical measures to understand how parasitic mite abundance and over-wintering of honey bee colonies is influenced by modern beekeeping practices in comparison to resilient natural hive constructions.	\$24,910.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Tennessee Department of Agriculture	\$534,973.15	Commission a feasibility study for a specialty crops cooperative warehousing and distribution center for Robertson County farms	The Robertson County Chamber of Commerce is leading this project to explore the feasibility of establishing a cooperative warehouse/distribution facility in Robertson County for local farmers to market, process and distribute their specialty crops to local retailers and restaurants in the middle Tennessee area. The County will use the fund to support a feasibility study to assess the best fit and launch the study with the direct engagement of our collaborative partners listed above. The goals are to determine if such an undertaking is economically feasible for Robertson County alone or in partnership with neighboring counties, outline the expected costs and potential funding sources of such a project and, if determined to be a viable project, assemble a task force to begin next steps. We will ask for proposals for this feasibility study from university ag-business departments across the state, assess the best fit and launch the study with the direct engagement of our collaborative partners listed above.	\$14,200.00
Tennessee Department of Agriculture	\$534,973.15	Considerations for Growing and Marketing Specialty Crops in Tennessee	The Center for Profitable Agriculture at University of Tennessee will lead this project to develop an Extension outreach curriculum for an educational workshop to be conducted with specialty crop growers and potential growers of specialty crops. The workshop will primarily address basic production considerations and basic marketing considerations for specialty crops. The workshop will be aimed primarily at new and beginning growers of specialty crops. This project will develop tools for County Agriculture Extension agents, other agriculture leaders and specialty crop growers to use in the evaluation, development and marketing of specialty crops, providing a strong learning foundation for specialty crop growers who are considering the production of alternative specialty crops and alternative production systems for specialty crops. The program also expands opportunities for marketing success of specialty crops in Tennessee.	\$50,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Tennessee Department of Agriculture	\$534,973.15	Early Detection of Foodborne Pathogens via Crossflow Nano/Microfiltration from Leafy Greens, Soil and Irrigation Water	The Middle Tennessee State University will lead this project to develop a novel microbial separation and identification protocol that employs an accelerated sample preparation technique that will allow for the concentration and recovery of low levels of food pathogens (e.g. 1 CFU of Salmonella per g of sample) in commercially processed foods, fresh leafy greens, soil and irrigation water samples. The proposed procedure enables a rapid detection of food-borne pathogenic bacteria using nano/microfiltration to accelerate Salmonella, E. coli and Listeria detection before it is shipped from a production area or processing facility, which will prevent massive and expensive food recalls before food-borne disease or death occurs and improve consumer confidence in agricultural production.	\$35,960.00
Tennessee Department of Agriculture	\$534,973.15	Improving Sustainable Boxwood Disease Management in Tennessee Nursery Production	The Tennessee State University (TSU) will lead this project to determine the impact of boxwood quarantine implementation and identify barriers to adaptation of boxwood blight best management practices in the Tennessee nursery industry. TSU also will also to develop and validate effective alternative Phytophthora root rot disease management strategies. This study have four outcomes: 1) determination of changes on Tennessee nurseery businesses after boxwood blight quarantine implementation; 2) adaptation of boxwood blight best management practices; 3) development of multiple systems approach to improve Phytophthora root rot disease management;; and 4) organization of training and development of extension/research-based publications, factsheets and video clips to provide practical advice to growers.	\$43,964.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Tennessee Department of Agriculture	\$534,973.15	Increasing Market opportunities for Specialty Crop Growers through Food Hub Farmer Cooperative Incubation– Pilot Project	Memphis Tilth’s Bring It Food Hub program is requesting \$40,000 through the Specialty Crop Block Grant (SCBG) program to increase sales distribution channels, facilities available, peer resources support, and decrease storage and transportation barriers within the Memphis area for small-scale specialty crop growers in the Mid-South. Over the course of this project we would like to incubate the development of a collective cooperative of small-scale specialty crop growers that will organize crop planning, sales, USDA GAP certification and food safety training, as well as transition the Bring It Food Hub wholesale clients and subscription clients into the farmer cooperatives CSA or direct farmer distribution.	\$40,000.00
Tennessee Department of Agriculture	\$534,973.15	Pick TN Conference Speaker Fees, Conference Scholarships, Conference Farm Tours and Executive Director	The Board of Directors for the Pick TN Conference is leading this project to coordinate the Pick TN Conference to provide educational and training resources and improve networking for growers, educators, markets, industry suppliers and agencies to increase competitiveness and success of specialty crops in TN. The conference will utilize the vast network of statewide associations and agencies to retain industry leaders and experts to provide educational workshops, training (food safety, GAP certification, etc.) and marketing expertise to conference attendees. As a result of this project the Pick TN Conference will be able to bring in experts from across the United States in order to improve the learning program and improve and support statewide collaboration within our industry.	\$50,160.10
Tennessee Department of Agriculture	\$534,973.15	Promoting specialty crop sales at farmers markets through crop-specific events	The Tennessee Association of Farmers Markets will lead this project to create and distribute a toolkit for developing and promoting specialty crop-focused events at farmers markets statewide following the seasonality of specialty crops (strawberries, tomatoes, sweet corn, peppers, and honey). Examples of resources produced for the kit would include an event brand guide, e.g. a Tennessee grown TomatoFest logo with artwork and photography that could be used for print and online promotion; a press kit, including sample press releases; a guide for planning events with day-of activities, etc. The purpose of the project is to strengthen the viability and visibility of specialty crop producers throughout the state of Tennessee and to increase sales of specialty crops at farmers markets.	\$35,050.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Tennessee Department of Agriculture	\$534,973.15	Specialty Crop Education and Growth	CUL2VATE will lead this project to provide end user education as to nutritional information and best use of produce provided, with the goal to leverage increased efficiencies in high tunnels, barn/training facilities, distribution van. CUL2VATE will 1) provide practical application and academic training on Cul2vate’s training farm and leverage resource base and relational network ; 2) provide Access to Food Safety training and education that meets requirements set forth by updated industry policies and guidelines.; 3) create more awareness and demand for nutritional crops through collaborative training; and 4) Create replicable “best practices” training manual for further engagement and promotion of specialty crop expansion.	\$49,900.00
Tennessee Department of Agriculture	\$534,973.15	Tennessee Grape and Wine Industry: Development and Implementation of Marketing/Revenue Growth Opportunities	The Tennessee Farm Winegrowers Alliance (TFWA) will use the fund to utilize requires professional and, dedicated leadership to coordinate and manage potential explosive growth in the Tennessee grape and wine industry. The purpose of this project is to provide funding for a third and final year supporting maturation and progression of TFWA from an ad hoc member volunteer supported organization to a robust, viable and committed leader of Tennessee’s vineyards and wineries. The purpose of this project is to provide funding for a third and final year supporting maturation and progression of TFWA from an ad hoc member volunteer supported organization to a robust, viable and committed leader of Tennessee’s vineyards and wineries, which the fund will mostly be used to provide partial salary offset in 2019 and 2020 for TFWA Executive Director. TFWA is a vital industry asset that is central to the state’s positioning as a leader in regional wine production and dedicated and sustainable leadership is critical to expanding marketing opportunities and continued industry growth, particularly benefiting rural areas in Tennessee. TFWA’s current board/leadership is 100 percent volunteer and is made up from dedicated members of the industry – both farmers and value-added producers.	\$50,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Tennessee Department of Agriculture	\$534,973.15	Tennessee State Parks Honey Project	Tennessee Department of Environment and Conservation (TDEC) will lead this project to continue its existing Tennessee State Parks Honey Pilot Project to promote and sell honey produced from apiaries located in strategically selected State Parks to advance and enhance benefits for pollinator education, the parks system, and the agricultural community at large. The project will result in a sustainable honey/pollinator education and production program in Tennessee State Parks. The selection of the parks is based on their proximity to distressed areas, as well as their ability to reach greater numbers of guests. Because the majority of rural communities where these parks located are considered “food insecure”, the project seeks to provide education and inspiration for visitors to address their access to food through setting up it is possible to create a sustained grassroots initiative to maximize agricultural opportunities and eliminate our rural food deserts.	\$13,800.69
Tennessee Department of Agriculture	\$534,973.15	Value of Pollinators in Vegetable Crop Production	Agricenter International will lead this project to increase the knowledge and understanding of agriculture through experimentation the value of utilizing a pollinator source for fruit set improvement in various commercial vegetable production practices. This project will conduct an experiment to determine yield difference with and without pollinators, specifically with different way to manage honey bees. The research team aims to 1) evaluate impact a honey bee colony has on several crops to determine the efficacy a nearby pollinator has on fruit set and yield; and 2) determine synergy between honey harvest with different crops as an additional source of revenue for Tennessee growers and yield. The results generated from the experiments will be disseminated through field days and data slides on our website.	\$34,202.95
Tennessee Department of Agriculture	\$534,973.15	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$42,790.76

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Texas Department of Agriculture	\$2,107,926.36	A Multidisciplinary Approach to Combat the Threat Of Viruses In Texas Vineyards	Texas A&M University will lead this project to study two selected diseases (Grapevine Leafroll Disease (GLD) and Red Blotch (GRBV)) and their associated viruses (grapevine leafroll-associated viruses (GLRaVs) and grapevine red blotch virus (GRBV)). The objectives of this project are to: 1) conduct complete genome characterization of TX isolates of selected viruses and use the information to optimize diagnostic primers for accurate detection of these viruses; 2) identify potential vectors of GRBV and GLRaVs that are present in Texas vineyards; 3) determine the overall impact of GRBV or GLRaV-3 on grapevine health, productivity, and fruit quality attributes; and 4) deliver project outcomes through grower outreach and education. The results will provide the scientific basis for the implementation of vector management programs in Texas vineyards.	\$67,000.00
Texas Department of Agriculture	\$2,107,926.36	Bridging the Leadership Gap In Texas: Youth Leadership and The Promotion Of Specialty Crop Products In The National School Lunch Program	The Texas Department of Agriculture will lead this project to support the following four projects: 1) HART Ambassador Recognition: promote the consumption of specialty crops in schools through 20 taste testing events statewide; 2) Farm Fresh Network Member Retention: Identification and development of resources needed to move Farm Fresh Network members along the readiness continuum; 3) Farm Fresh Network Promotion: highlight successful efforts by specialty crop members in the Farm Fresh Network; and 4) Nutrition Assembly Tours to Support Specialty Crops. The proposed projects help current producers of specialty crops gain access to a new marketplace, positions them as experts in their field and exposes youth leaders to the importance of promoting local agriculture. Crop products, promotion of specialty crop products in the annual Farm Fresh Challenge and development of marketing recommendations based on experiential learning opportunities for specialty crop producers interested in selling directly to schools.	\$150,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Texas Department of Agriculture	\$2,107,926.36	Consumer Education and Awareness Of Texas Produce Through Regional Events	The Texas Department of Agriculture – Marketing and International Trade Division (TDA-Marketing) program will create a marketing campaign that will build awareness for Texas produce through specialty food events throughout the state. Utilizing demonstrations and exhibits at regional food festivals along with in-store displays and demos, this project will raise the awareness of local Texas produce. Retail demonstrations will also add the ability to incorporate other regional, seasonal specialty crops through creative displays and marketing techniques. TDA Marketing will also be acting as a liaison to commodity groups to promote Texas specialty crops branding and promotion in print and social media.	\$230,000.00
Texas Department of Agriculture	\$2,107,926.36	Creating the Ability To Mechanically Harvest Texas Sweet Onions For Fresh Markets	The Texas International Produce Association (TIPA) will lead this project to develop a fully mechanized harvesting system for short-day, sweet onions grown in order to make the state onion production more competitive. The project will be conducting the research in collaboration with an onion harvester manufacturer. The project will evaluate and optimize the mechanical harvester for fresh market onions in TX with an expectation that the harvester will be available for the market. This project aims to remove the need for massive labor crews to manually harvest the onions in the field. The general objectives of this projects are to 1) reduce harvest costs through mechanization of the harvest operations; 2) develop disease and pest tolerant sweet onion cultivars for mechanical harvesting.	\$200,000.00
Texas Department of Agriculture	\$2,107,926.36	Developing A Grape & Wine Production Video Series	The Texas A&M AgriLife Extension Service aims to develop 20 educational videos on grape and wine production that target prospective and current members of the Texas grape and wine industry. Texas is the fifth leading wine producing state in the nation with 520 wineries (G winery permits) and approximately 6,000 acres of grapes. The number of wineries has increased by more than ten-fold since the year 2000 and grapes acreage has more than doubled resulting in a wide range in production practices, challenges, and levels of experience. Texas A&M AgriLife Extension Viticulture and Enology Specialists, and project partner Est Texas Grape and Wine Producers Inc., will design and develop videos to address common questions and challenges, and an AgriLife videographer will edit and publish them.	\$18,712.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Texas Department of Agriculture	\$2,107,926.36	Developing A Nondestructive High Throughput Indicator for Watermelon Maturity Using Near Infra-Red Spectrometer	The Vegetable and Fruit Improvement Center and Texas A&M AgriLife Research will lead this project to develop a non-destructive predication of internal and external quality attributes of watermelon using near infrared spectrometer. Commonly grown watermelon varieties in Texas will be tested for potential external maturity indicators and key health-promoting phytochemicals. Destructive analysis will also be applied as a reference method to determine the physico-chemical properties and nutritional composition at different ripening stage of watermelons to correlate the data. The prediction model will be optimized to determine watermelon quality to distinguish right picking date from the plant. This data will provide improved methods for better harvesting time and will provide the proof-of-concept to commercial watermelon producers.	\$176,500.00
Texas Department of Agriculture	\$2,107,926.36	Developing Strategies for Mitigating The Impacts Of Freezing And Cotton-Root-Rot On Olive Production In Texas	The Texas Association of Olive Oil (TXAOO) will lead this project to develop strategies to minimize losses due to freezing and cotton root rot disease in olive orchards. The research team will use Texas adapted olive varieties and non-regionally adapted germplasm to identify potential genetic and biochemical markers for evaluating the freeze tolerance using established techniques. The principal focus of the project is to: 1) identify techniques to minimize freezing damage; 2) screen selected olive varieties for tolerance to Cotton Root Rot and create an online CRR risk assessment tool; and 3) devise a long-term strategy for developing freezing and cotton root rot tolerant cultivars for regional production.	\$82,300.00
Texas Department of Agriculture	\$2,107,926.36	Exploration of Alternative Fruit Crops With High Potential And Low Input For The Texas Fresh Fruit Market	The Texas A&M AgriLife and Stephen F. Austin State University will lead this project to evaluate the effects of improved cultivars for two low-input fruit crops, Asian persimmons and pineapple guava. The project aims to establish replicated variety trial plantings for these two selected crops and assess plant health and performance during establishment, including the initial fruit quality of pineapple guava and persimmon cultivars results will be presented to fruit industry members and other interested parties. A full fact sheet on pineapple guava production and performance of persimmon cultivars will be developed to promote the production of the commodity.	\$52,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Texas Department of Agriculture	\$2,107,926.36	Food Safety Education Toolkit (FOSET) For Texas Specialty Crop Hydroponic Growers	The University of Houston (UH) will lead this project to create a Food Safety Education Toolkit (FoSET) for Texas hydroponic growers which will include PSA-based curriculum specific for hydroponic growers, online course modules, and information-sheets/pamphlets for owners/managers to train employees. The major tasks of this project are: 1) conduct a microbial study to determine baseline food safety risks associated with in-soil versus hydroponically grown specialty crops; 2) survey hydroponic growers to identify baseline food safety practices, current resource guides, and specific pain points that can be addressed; 3) create hydroponic-specific FoSET garnered through PSA's training program; 4) conduct outreach and dissemination of the study result; and 5) survey hydroponic growers after dissemination of FoSET to determine efficacy of the educational materials.	\$62,000.00
Texas Department of Agriculture	\$2,107,926.36	Improving the Perception Of Texas Wines	The Texas Department of Agriculture will lead this project to conduct an integrated marketing communications campaign targeted at local consumers, along with national wine media. Elements identified as beneficial to continuing to assist the industry's growth include: 1) visual and interactive components of digital content through the Texas Department of Agriculture's wine website, uncorktexaswines.com; 2) increasing media and key purchaser relationships via press visits and tours; and 3) visual promotions and enhanced marketing automation. Through these targeted efforts, the TDA hopes to increase exposure of high-quality Texas grapes and wine and expand sales and production within the state. The general objectives of this project are to 1) expand National Media Coverage, thus national awareness of Texas Wine industry; 2) increase prevalence of Texas Wines in Texas restaurants; and 3) increase Texas Wine Sales.	\$105,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Texas Department of Agriculture	\$2,107,926.36	Increase Market Share and Consumption Through Branding of Texas Onions	The Texas International Produce Association, working alongside the South Texas Onion Committee (STOC), seeks to increase market share and consumption of Texas onions by making American consumers and national purchasing entities more aware of flavor and availability of the crop through a focused multi-year marketing plan. The project will seek to rebrand the Texas 1015 Sweet Onions into a recognized logo, along with materials available for all entities in the industry, so that the product will flow through the supply chain and be recognized by all parties – including the final consumer – as a premium good, and therefore command a premium price at market, thereby returning higher profits to the growers.	\$100,000.00
Texas Department of Agriculture	\$2,107,926.36	Interactions Between Zebra Chip of Potato and Crop Irrigation	Texas A&M AgriLife Research and USDA-ARS will lead this project to research how deficit irrigation or various degrees of plant stress impact tomato-potato psyllid (TPP) or development of Zebra chip (ZC). This study aims to accomplish the following: 1)determine the impact of deficit irrigation and different levels of water stress on potato yields; 2) determine the impact of deficit irrigation on TPP, Candidatus Liberibacter solanacearum transmission, and subsequent development of ZC; 3) evaluate the effects of ZC on performance and efficiency of an sensing instrumentation system; and 4) Provide hands-on technical training in specialty crop production and research students.	\$104,000.00
Texas Department of Agriculture	\$2,107,926.36	Investigating the Potential For Golden Kiwifruit As A New Specialty Crop In Texas	The Nacogdoches-Nacogdoches County Economic Development Corporation (NEDCO) will partner with Texas A&M AgriLife Extension and Stephen F. Austin State University (SFASU), Nacogdoches, to conduct a project evaluating the feasibility of golden kiwifruit in Texas. This project builds on crops (2014-2018) at a Kiwifruit research plot at SFASU established in 2011, which can best be described as the first kiwifruit production in Texas history. This project holds the promise of introducing a new specialty crop to the Texas market. Results from this project will be made available via educational resources, field day events, comprehensive production guide and other media to producers as well as the general public.	\$87,018.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Texas Department of Agriculture	\$2,107,926.36	Market Matchmaking for Specialty Crop Producers in Texas	Sustainable Food Center’s (SFC), Foodshed Investors (FI), Texas A&M AgriLife Extension, and the National Center for Appropriate Technology (NCAT) will lead this project to develop a pipeline between specialty crop producers and institutional buyers to: 1) build capacity for local food procurement among a cohort of at least four institutional buyers to expand or improve purchasing of Texas-grown and sustainably-grown specialty crops, 2) increase wholesale readiness among a cohort of ten Texas specialty crop growers, 3) increase revenue of the specialty crop growers cohort by 25 percent, and 4) ensure coordination/planning between growers and buyers. Results of the project will be shared at conferences and field days hosted by industry stakeholders.	\$140,000.00
Texas Department of Agriculture	\$2,107,926.36	Possibility, Duration, And Molecular Predictors of Sanitizer Tolerance in Listeria Monocytogenes	The Texas International Produce Association, the Center for Produce Safety (CPS), and University of Georgia will lead this project to fill critical knowledge gaps regarding the tolerance of Listeria monocytogenes to chlorine and quaternary ammonium sanitizers. The major tasks are: 1) measure residual sanitizer levels in leafy green and tomato processing facilities; 2) conduct laboratory assays to investigate tolerance development and persistence; 3) explore machine-learning-aided tolerance prediction; and 4) use whole genome sequencing data to identify evolutionary signals (or lack thereof) of tolerance development. The results of this project will provide the industry and regulators with scientific evidence for supporting, better implementing, or justifiably shelving sanitizer rotation programs. Fill critical knowledge gaps regarding the tolerance of Listeria monocytogenes to chlorine and quaternary ammonium sanitizers. Due to concerns over bacterial tolerance to sanitizers, the rotation of sanitizers is recommended in fresh produce processing facilities to better control foodborne pathogens, especially Listeria monocytogenes (Lm). However, there is still no scientific consensus on whether Lm develops sanitizer tolerance. Even if Lm develops tolerance through sub-lethal exposure to sanitizers, how long and how strong the tolerance can last should be considered in determining whether sanitizer rotation is needed and how often it should be applied.	\$170,595.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Texas Department of Agriculture	\$2,107,926.36	Quantifying Texas Honey Bee Health Risks Associated with Dominant Beekeeper Business Models To Improve Colony Survival, Honey Production And Crop Poll	Texas A&M University and the Bee Informed Partnership's Texas Technical Transfer Team will lead this project to quantify the operational risks experienced by monitoring colony health and management data across the major beekeeping operational classes. This project will increase Texas colony survival rates through four objectives: 1) survey beekeepers from the major commercial beekeeping operation classes to determine colony loss rates and management practices; 2) monitor colony health and disease loads from beekeeper survey participants; 3) determine pollen diversity and pesticide content; 4) evaluate health and management data to generate commercial beekeeper class-specific risk assessment reports. This study aims to promote a competitive pollination industry, keeping costs low for producers and consumers alike.	\$150,000.00
Texas Department of Agriculture	\$2,107,926.36	Wholesale Pecan Promotion from The Viewpoint of Production to Consumption	The Texas Pecan Growers Association and project partner, Texas Pecan Board, will conduct a Texas Pecan agricultural experience for wholesale buyers from regions of the United States that do not typically purchase or consume many pecans. This domestic trade mission will allow buyers to directly interact with Texas pecan growers and processors in their orchards and facilities, as well as inform buyers of the many nutritional and cultural application benefits of using Texas pecans. The general tasks for this project will be to organize and conduct a tour around the El Paso Valley region of pecan production in the fall of 2020 for buyers as well as host a chef demonstration showing the many varied uses of pecans in food preparation. The project will also develop and assemble information and materials to share with growers and buyers.	\$33,098.00
Texas Department of Agriculture	\$2,107,926.36	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$179,147.91

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
U.S. Virgin Islands Department of Agriculture	\$242,765.64	Address Local and Regional Plant Pest Concerns through Research, Collaboration, and Outreach - Best Pest Management Tool Validation and Demonstration	The University of the Virgin Islands—Cooperative Extension Service (UVI-CES) Pest Management Program proposal intends to help minimize the damage and spread of common crop and backyard pests by developing scientifically-based, practical, available, economical, and local remedies to implement on-farm, in backyard gardens, and within greenhouses. They plan to disseminate results to stakeholders through farmer and urban backyard meetings, demonstration workshops, Extension bulletins and handouts, and illustrative card sets.	\$28,713.00
U.S. Virgin Islands Department of Agriculture	\$242,765.64	Development and Comparison of a Tunnel Hoop Garden versus Outside Garden	The U.S. Virgin Islands Department of Agriculture is seeking to establish a pilot program to compare specialty crops grown in a tunnel hoop garden versus specialty crops grown in an outside garden. This project will be implemented utilizing Elementary School Students, who will assist in the development of this project.	\$46,694.00
U.S. Virgin Islands Department of Agriculture	\$242,765.64	Establishment of a Weekly Radio Broadcast Promoting Specialty Crops Competitiveness, Awareness, Access, and Consumption in US Virgin Islands	The U.S. Virgin Islands Department of Agriculture (VIDOA) is seeking funding for an hourly weekly talk show to promote Specialty Crops grown locally, while providing pertinent agriculture information.	\$20,000.00
U.S. Virgin Islands Department of Agriculture	\$242,765.64	Establishment of Education and Outreach Seminars to Increase Awareness/Consumption of Specialty Crops Grown in USVI	The U.S. Virgin Islands Department of Agriculture (VIDOA) is seeking funding to provide outreach activities, seminars, trainings, and workshops related to promoting, educating, and increasing the awareness, access, and benefits of growing specialty crops in the US Virgin Islands. Most of the fruits and vegetables consumed in the US Virgin Islands are not fresh or locally grown, and the cost to import such crops are rising at an alarming rate. Locally grown crops have higher nutritional value and has a longer shelf life. Thus, promoting and educating the VI Community on the benefits of growing and consuming locally grown crops will increase the competitiveness of specialty crops grown in the US Virgin Islands.	\$58,180.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
U.S. Virgin Islands Department of Agriculture	\$242,765.64	Evaluation of the African High Protein Tropical Winged Bean	The Winged bean, scientifically known as Psophocarpus tetragonolobus (L.) DC. is a promising legume crop of the world's tropical regions. It is also known as the Goa bean, Four-Angled bean, Four-Cornered bean, Manila bean and Dragon bean. Every part of the winged bean is edible, earning it the distinction of "supermarket on a stalk". The winged bean may be planted as a multipurpose legume food crop, permitting it to be utilized as a green vegetable, as a source of edible fresh green pods, as well as achieving soil coverage. As a plant which exhibits vigorous nodulation, the Winged Bean is very desirable both as a cover crop and for soil improvement.	\$53,550.00
U.S. Virgin Islands Department of Agriculture	\$242,765.64	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$35,541.64
Utah Department of Agriculture and Food	\$334,775.48	Early Detection of Allium Leaf Miner (<i>Phytomyza gymnostoma</i>) in Utah	Utah State University scientists will identify leaf miner species in Utah onion, garlic and leek crops and neighboring weeds and crops in an effort to determine if a new and invasive onion leaf miner species is already present in Utah, and if not to detect it as soon as it arrives. Additionally, the efficacy of yellow sticky cards will be assessed for detection of leaf miner adults. Yellow sticky cards are a grower-friendly monitoring method that may provide early detection of leaf miners. The invasive Allium leaf miner causes 100 percent yield loss in affected fields due to the larvae burrowing into the onion bulb. The early detection of the leaf miner in Utah would allow onion and garlic growers to initiate scouting and control measures before the insect devastates the crops thus maintaining high quality and yield. Results will be shared with growers of affected fields as soon as it becomes available and presented at numerous grower and extension training meetings in Utah (Utah Onion Association Winter Meeting, Urban and Small Farms Conference, USU Extension Annual Conference, etc.)	\$24,214.50

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Utah Department of Agriculture and Food	\$334,775.48	Improving Predictability of Utah Raspberry Production Using Tunnels and Heating	The High Tunnel Research Team in the Department of Plants, Soils and Climate at Utah State University will develop high tunnel production practices that influence early fruiting of fall-bearing raspberries. The research will focus on how high and low tunnels influence root zone temperature, and the temperature requirements for raspberry primocane emergence.	\$76,068.04
Utah Department of Agriculture and Food	\$334,775.48	Monitoring Groundwater Quality and Developing Best Water Management Practices for Sustainable Green Industry Production	Utah State University will establish an agreement or contractual relationship with the State Department of Agriculture and Food to lead and execute the project to monitor the quality of groundwater, develop best water management practices, and select salt tolerant plants for nursery and greenhouse production. The results from this project will be disseminated to nursery and greenhouse growers through field days, workshops and educational materials. Adoption of best water management practices by local growers in their specialty crop production could enhance the competitiveness of Utah green industry through increased crop quality, reduced culinary water consumption, reduced inputs, and/or increased economic return.	\$64,610.00
Utah Department of Agriculture and Food	\$334,775.48	Searching for the Samurai Wasp and Promoting Native Parasitoid Wasps for Biological Control of the Invasive Brown Marmorated Stink Bug	The invasive insect pest, brown marmorated stink bug (BMSB) began causing economic loss to Utah's specialty crops (fruits and vegetables) in 2017. This project led by Utah State University will address implementation of a known-effective management practice for BMSB, promotion of native and introduced parasitoid wasps for biological control. Surveys for the samurai wasp and native Utah parasitoid wasps will be conducted with BMSB sentinel egg masses and yellow sticky cards. Parasitoids will be evaluated for their efficiency in killing BMSB. If the samurai wasp is detected, the Utah Department of Agriculture and Food will be engaged to support redistribution efforts in BMSB-infested areas of the State. Outreach education to Utah's specialty crop producers at annual conferences and meetings will relay study results and impacts on reducing BMSB populations and crop loss in Utah. These efforts will help protect Utah's fruit and vegetable industries from economic harm.	\$45,358.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Utah Department of Agriculture and Food	\$334,775.48	Split Butternut Utilization	La Montanita Co-op, dba Four Corners Group Gap, will examine the possibility of creating additional revenue for growers of butternut squash to more fully utilize the produce they grow and reduce waste. We will have the grower's sort all the butternut that has split and that the only defect is the split into separate bins - at present growers can only sell butternut that is rated #1. We will then take the butternut squash that have splits to a location to peel and cut the butternut. After peeling the butternut squash and cubing it. It will be packaged in a wrapped package and then will be marketed to local grocery stores, and institutional users. By undertaking this effort, we hope to create and expand, if it already exists in another market, for local growers to move produce that is grown here.	\$24,565.02
Utah Department of Agriculture and Food	\$334,775.48	The Fight Against Fire Blight to Protect Utah's Pome Fruit Industry	This project, conducted by members of the Utah State University Extension IPM Program, will test novel conventional and organic treatment options for the management of a bacterial disease called fire blight. Fire blight is the leading cause of both yield and tree loss in Utah apple and pear orchards. Using field and grower meetings, the annual fruit conference, and a blog-style newsletter, growers will learn which materials are the most effective, both in managing the disease, and in improving profitability. This project will evaluate and determine the most effective fire blight spray options available on the market for both conventional and organic pome fruit growers (apple and pear) in Utah.	\$30,097.00
Utah Department of Agriculture and Food	\$334,775.48	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$19,410.47

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Vermont Agency of Agriculture	\$330,427.11	#GrowQuince	#GrowQuince will support commercial and backyard quince (<i>Cydonia oblonga</i>) growers in the region and substantially improve the performance and profitability of this specialty crop by compiling and disseminating quince growing resources and expertise. For the first phase of #GrowQuince, partners include long-time quince growers Scott Farm and Akaogi Farm, organic grower Harlow Farm, and specialty quince producer Vermont Quince. All are located in the Connecticut River watershed of southern Vermont and New Hampshire. Vermont Quince is the applicant and will lead the coordination and evaluation of #GrowQuince.	\$10,000.00
Vermont Agency of Agriculture	\$330,427.11	A survey of heirloom and feral hops for resistance to fungal and insect pests	Researchers at the University of Vermont (UVM) Department of Plant and Soil Science, UVM Department of Plant Biology, and UVM Extension will characterize the genetic basis of insect and pathogen resistance in heirloom and feral hops from the Northeast as well as commercial varieties using field trials and a new high-throughput DNA sequencing approach targeted at characterizing variation in disease and insect resistance genes called resistance gene enrichment and sequencing (REN-SEQ).	\$20,000.00
Vermont Agency of Agriculture	\$330,427.11	Best practices that control the spread of Asian earthworm pests in and through the horticultural trade	The University of Vermont will test botanical and microbial agents as best management practices in nursery and landscaping businesses towards controlling the spread of Asian earthworm pests (<i>Amyntas species</i>) and disseminating results to the horticultural industry.	\$23,805.00
Vermont Agency of Agriculture	\$330,427.11	Food Connects Food Hub Expansion to the Upper Valley	By 2021, Food Connects will increase sales by 89 percent for over 20 Vermont specialty crop producers by developing new wholesale customers, new supply chain relationships, and marketing materials with a focus on the Upper Valley of Vermont & New Hampshire.	\$45,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Vermont Agency of Agriculture	\$330,427.11	Improving Nutrient Management in High Tunnels on Vegetable Farms in Vermont	University of Vermont Extension will develop comprehensive fertilizer recommendations for high tunnel vegetable crops, with a focus on tomatoes. These recommendations will be utilized by 100 vegetable farms with a total of 200 high tunnels that produce \$5.5 million worth of vegetable crops annually. As a result, 75 of these growers will report improved crop yield, quality, and/or profitability.	\$32,785.00
Vermont Agency of Agriculture	\$330,427.11	Local Food Markets as a Placemaking Tool: Increasing Specialty Crop Consumption, Access and Awareness	The Vermont Agency of Agriculture, Food and Markets (VAAFAM) will continue to strengthen collaboration with community planning efforts across Vermont to facilitate placemaking discussions around how best to incorporate specialty crop market opportunities into community development and revitalization projects and ensure the long-term viability of these market opportunities for specialty crop producers.	\$74,755.74
Vermont Agency of Agriculture	\$330,427.11	The UVM Bee Diagnostic Lab: Protecting Vermont's honey crop and fruit and vegetable pollination services through pest and disease monitoring	The University of Vermont will improve available resources for pest and disease monitoring, diagnosis, and education for Vermont beekeepers and the Vermont Apiary Inspection Program by beginning a bee pest and disease diagnostic service laboratory.	\$52,000.00
Vermont Agency of Agriculture	\$330,427.11	Understanding the Risk Benefit of Brassica Cover Crops on Vegetable Farms in the Northeast	The University of Vermont will evaluate the benefits and challenges of implementing brassica cover crops in vegetable production systems by developing practical research and disseminating results to stakeholders through field days and web-based media.	\$47,584.00
Vermont Agency of Agriculture	\$330,427.11	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$24,474.38

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Virginia Department of Agriculture and Consumer Services	\$541,467.53	1. Optimization of Virginia Pumpkin Production Through Improved Disease Management and Identification	Researchers at Virginia Tech’s Tidewater Agricultural Research and Extension Center (TAREC) and the Eastern Shore AREC (ESAREC) will conduct research objectives to determine the most effective fungicide programs at reducing losses to these diseases while improving net returns as well as produce a helpful disease identification guide to help producers to identify disease problems in pumpkin fields. To accomplish these goals, we will conduct fungicide program field trials on grower fields and our respective ARECs. Once marketable yield is determined we will conduct a cost-benefit analysis for each fungicide program. We will also survey fields across the state to determine the frequency and distribution of Plectosporium blight and assess individual isolate sensitivity to fungicides. We will take note of production practices and varieties in each field to determine if they have a specific impact on Plectosporium blight severity. Photographs will be collected in pumpkin fields across the state to help develop a disease identification guide. Results from this work will be used to implement cost-effective disease strategies for pumpkins as well as increase grower awareness concerning pumpkin diseases.	\$58,724.25
Virginia Department of Agriculture and Consumer Services	\$541,467.53	2. Sulfur Fertility Rates for Virginia Vegetables to Enhance Yields and Increase Fertilizer Use Efficiency	The Virginia Tech Eastern Shore Agricultural Research and Extension Center will increase fresh market tomato, broccoli, potato, and sweet corn production by 14 percent by updating sulfur fertilizer recommendations using field research, through updating vegetable production guides, via field days, and grower meetings.	\$58,692.60

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Virginia Department of Agriculture and Consumer Services	\$541,467.53	3. Establishing Time-Intervals for Application of Raw Biological Soil Amendments of Animal Origin during Produce Production	Virginia Tech will reduce foodborne pathogen contamination in specialty crops by determining the risk of applying raw biological soil amendments of animal origin (BSAAO) to soils during produce production. These findings will directly support growers of Virginia specialty crop commodities, specifically tomato, cucumber, and apple, in establishment of best practices for the application of raw BSAAO to fields and compliance with the Food Safety Modernization Act (FSMA) Produce Safety Rule (PSR). Results will be communicated to stakeholders through a cadre of extension, education, and outreach efforts. BSAAO may contain pathogens. Data is needed on pathogen survival in BSAAO (e.g., poultry litter, bovine manure) amended soils to provide standards for their safe application in produce production environments. "Safe application" is defined as the time-interval(s) between application of raw BSAAO to fields and harvest of produce that significantly minimizes the risk to public health. No prior studies exist establishing safe time-interval(s) between application of raw BSAAO and harvest of produce from Virginia.	\$58,294.08
Virginia Department of Agriculture and Consumer Services	\$541,467.53	4. Agronomic, Post-harvest, and Economic Evaluation of Strawberry Cultivars in High Tunnel and Open Field Production	Virginia Tech. in cooperation with Virginia State University will establish an agreement with the State department of agriculture to evaluate agronomic, post-harvest, and economic aspects of various strawberry cultivars in high tunnel and open field production to inform specialty crop growers of the findings, through information dissemination of the data that will be collected and analyzed.	\$58,550.09

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Virginia Department of Agriculture and Consumer Services	\$541,467.53	5. Maximizing Efficiency of PGR Spray Programs for Apples in Virginia	Plant growth regulators (PGRs) are small synthetic molecules that mimic the structure and/or the function of plant hormones. PGRs are used extensively in modern apple production systems to induce branching of young trees, manage crop loads, control pre-harvest drops, extend the harvest season, control physiological disorders, decrease disease incidence and enhance fruit coloration. Application timing is a major determining factor of PGR efficiency. However, because of the overlapping nature of various orchard management practices, PGR compounds are often tank-mixed with or sprayed within a narrow time window of other chemicals that may interfere negatively with their efficacy. Through the proposed project, Virginia Tech will determine and recommend PGR spray programs that result in higher spray efficiency, less chemical incompatibility, and higher fruit yield and quality. The project will mainly focus on PGRs that are currently used and labeled for apple fruit thinning, improving return bloom, enhancing fruit coloration and delaying fruit ripening. The research findings will be communicated to apple growers and stakeholders in Virginia through the established extension program of the AHS Jr. AREC in Winchester, VA, that involves fruit schools, in-orchard meetings, extension pubs, and social media.	\$51,581.05
Virginia Department of Agriculture and Consumer Services	\$541,467.53	6. Developing Endophyte Community Based Approach to Protect Boxwood from Boxwood Blight	Virginia Tech will protect existing boxwood plants from boxwood blight by developing an entophytic microbial community-based technique that triggers resistance in susceptible plants. Results will be disseminated to stakeholders through grower and professional meetings, journals, and on-line extension programs.	\$57,935.20
Virginia Department of Agriculture and Consumer Services	\$541,467.53	7. Cider Production from Virginia-Grown Apples: Sensory and Chemical Drivers of Consumer Preference	The Virginia Polytechnic Institute and State University (Department of Food Science and Technology's Sensory Science and Evaluation group) will develop a descriptive lexicon for Virginia hard cider that will help to explain the connections among cider chemistry, the flavors and aromas of ciders, and consumer preferences and willingness-to-pay for these value-added specialty-crop products. The research group will disseminate these findings to stakeholders through extension publications and regional extension workshops, as well as through industry-organized workshops and field days.	\$58,804.05

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Virginia Department of Agriculture and Consumer Services	\$541,467.53	8. Making Food Safety Certification and Compliance Attainable for the Virginia Specialty Crop Industry in Light of Market and Regulatory Changes	Appalachian Sustainable Development (ASD) will enhance the competitiveness of fresh fruits and vegetables by providing training and one-on-one technical assistance to specialty crop farmers across Virginia and by determining the Food Safety Modernization Act (FSMA) mandated Current Good Manufacturing Practices (cGMP) requirements for produce packing facilities. Seventy produce farmers will be prepared to obtain USDA Good Agricultural Practices (GAP), Harmonized GAP, or Harmonized GAP Plus+, with 30 farmers achieving GAP certification. Additionally, 22 producers will be prepared to meet the Food Safety Modernization Act Produce Safety Rule requirements with the addition of Produce Safety Alliance Grower Trainings.	\$56,307.40
Virginia Department of Agriculture and Consumer Services	\$541,467.53	9. Tracking the Establishment of <i>Trissolcus japonicus</i> in Virginia	<i>Trissolcus japonicus</i> (<i>T. japonicus</i>) is a recently-arrived, Asian parasitoid wasp that attacks and kills brown marmorated stink bug eggs. Surveillance has shown that it is well established in Frederick County, VA but not elsewhere in Virginia. In summer 2018, with approval the Virginia Department of Agriculture and Consumer Services (VDACS), <i>T. japonicus</i> was released at 10 locations from northern to southwest Virginia, near sites where specialty crops were grown. At these sites, Virginia Tech will use traps to track the establishment and population development of <i>T. japonicus</i> and changes in brown marmorated stink bug populations. Experiments toward enhancing the effectiveness and efficiency of sampling protocols for this important biocontrol agent will also be performed in Frederick County. Outcomes expected are documentation of the establishment of <i>T. japonicus</i> across the release sites in Virginia, documentation of changes in brown marmorated stink bug populations at these sites, and assessments of improved surveillance protocols for <i>T. japonicus</i> .	\$15,625.90
Virginia Department of Agriculture and Consumer Services	\$541,467.53	10. Out of the Woods: Creating a Sustainable Medicinal Herb Supply Chain in Appalachia	Appalachian Sustainable Development will increase the profitability and long-term survival of the forest botanical supply chain in Virginia and beyond, by building up planting stock availability to incentivize forest farming, securing profitable markets that value conservation through cultivation, and increasing training, processing, and aggregation services to successfully connect forest farmers to growing demand.	\$58,530.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Virginia Department of Agriculture and Consumer Services	\$541,467.53	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$8,334.50
Washington State Department of Agriculture	\$4,792,479.94	1. Automation for Stringing Hops	2nd Sight BioScience, Inc. ("2nd Sight") engineers will design and build a machine that will automatically tie biodegradable twine to trellis cables in a hop yard and automatically anchor that cord to the ground at the hop plant's base so that the plant can grow up the cord. This automation will replace the manual labor required to perform the same task. During Phase 1 of the project, 2nd Sight has gathered specifications from twelve growers representing over half of the hops acreage in WA State. Field and crop variables have been defined and the growers have agreed that a final machine cost in the \$200,000 range will be acceptable. During Phase 2, 2nd Sight will produce engineering drawings of the machine and work with several growers to confirm that the machine meets defined requirements and fits within financial constraints. During Phase 3, 2nd Sight will build and field test a prototype unit. During the final phase, Phase 4, 2nd Sight BioScience will incorporate any needed design changes discovered during field testing and prepare for production unit build. At 2nd Sight, our scientists and engineers have decades of experience designing and testing innovative new technologies and automation. 2nd Sight also has equivalent experience bringing those innovations that meet many customers' needs to market.	\$250,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	\$4,792,479.94	2. Reducing cold damage in tree fruit	Every year, tree fruit growers lose money from low temperatures damaging flowers or reproductive buds. The U.S. Food and Agriculture Organization reported that cold damage has caused more economic losses to crops in the U.S. than any other weather hazard. The potential losses from cold damage are devastating and predicted to become more commonplace with increasingly variable spring weather. Despite the significant perennial threat of cold damage, growers have no new reliable means for protecting developing buds, depending largely on wind machines that are ineffective against advective freeze events. This proposal by Washington State University faculty will build short- and long-term solutions for reducing cold damage to in sweet cherry. Our objectives are to 1) characterize the variability among cultivars and material in the cherry breeding program for its sensitivity to cold damage, 2) Identify candidate molecular markers related to cold tolerance (long-term strategy), and 3) evaluate the potential for plant-based dispersions for reducing cold damage (short-term strategy).	\$188,165.00
Washington State Department of Agriculture	\$4,792,479.94	3. Seeking Resolution of Non-Tariff Barriers against Hops in Korea	The Washington Hop Commission – For the past three years, the US hop industry has worked to establish pesticide MRLs in Korea, a key and growing export market, prior to their January 1, 2019 regulatory transition. We succeeded with 20 new MRLs in place. However, 38 additional hop MRLs are needed. On August 20, Korea announced it would provide a three-year temporary extension on most of these MRLs, through 2021. This has started a three-year clock to get as many of these hop MRLs established as possible by this deadline. If not established, the MRLs will fall to 0.01 ppm, rendering most products in this category as not usable for export to Korea. The Washington Hop Commission proposes to work over the next three years to establish all needed hop MRLs and keep the Korean market open for Washington hop growers and shippers. This will be difficult. The easy submissions are completed. Major registrants have made submissions on our behalf. We now need to convince smaller registrants to make submissions, and when that is not possible, to make the submissions ourselves. We will assess the needs, determine if data is missing, generate data if necessary, retain experts on the Korean transition and technical submission experts, draft applications, pay for reviews in Korea, and travel to Korea to meet with	\$248,490.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			appropriate officials in support of this effort. We have a three-year window to complete this task, and we need resources to be successful. Should we fail, the hop market will suffer.	
Washington State Department of Agriculture	\$4,792,479.94	4. Regaining Market Share in Japan for Washington Hybrid Storage Onions	The Washington State Department of Agriculture International Marketing Program will conduct two inbound buying missions, bringing buyers from Japan to Washington onion packing facilities and farms to conduct business-to-business meetings and to educate them on the latest technologies, Good Agricultural Practices, food safety, quality control, and environmental compliance issues. Japanese buyers will not only gain awareness of the competitive attributes of Washington hybrid onions but will make purchases as a result of this project.	\$51,450.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	\$4,792,479.94	5. Washington Blueberry Promotions in the Philippines	<p>This project is designed to take advantage of the pending opening of the Philippines market to fresh Washington blueberries. A market access agreement is expected to be finalized by mid-2019 that will permit the entry of fresh blueberries from Washington for the first time. The Washington Blueberry Commission intends to use this advancement to make a strong push for Washington fresh, frozen and dried blueberries at a time when the products should already receive some interest from the Philippine trade. Specifically, the Washington Blueberry Commission will implement a robust promotional campaign to inform distributors, retailers, consumers and food manufacturers of the quality of Washington blueberries, their availability, and suppliers from the state. The promotional strategy will include retail promotions with point of sale materials, advertising, and retail demos that promote the Washington origin of fresh, frozen and dried blueberries among trade partners that carry these products. Promotions will also be extended to cover processed products in the market that incorporate Washington blueberry ingredients.</p>	\$80,000.00
Washington State Department of Agriculture	\$4,792,479.94	6. Washington Hard Cider Market Development and Symposium	<p>The Northwest Cider Association's (NWCA) members have a \$690 million economic impact on our region and a \$300 million impact on the state of Washington specifically. Hard cider sales have increased rapidly across the nation and Washington apple growers have benefitted from processors selling apple juice to cidemakers. Hard cider sales in Washington have slowed this year, so NWCA proposes developing an all-encompassing Cider Symposium to address this need. The symposium will be part conference, part buyer event and will encourage industry coordination to maintain strong growth and be as relevant as the beer and wine sectors. Kicking off year one in Tacoma, the symposium will enhance the Washington economy as a result of the growth in the hard cider market. This symposium will offer information and marketing tracks for orchard-based cider production, as well as modern cider styles made with the six main varieties of apples most commonly grown in Washington. It will provide a tailored marketing track to support sharing resources around distribution as well as a track for growers.</p>	\$100,290.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	\$4,792,479.94	7. The Farm to Food Accelerator for Washington Specialty Crop Women Producers	<p>The National Association of State Departments of Agriculture (NASDA) Foundation is partnering with the Washington State Department of Agriculture (WSDA), Oregon Department of Agriculture (ODA), Oregon State University Food Innovation Center (FIC) and Union Kitchen to develop a multi-state project to equip female specialty crop producers to grow their value-added businesses. NASDA Foundation and its partners will develop the Women’s Farm to Food Accelerator. The goal of the accelerator is to empower Washington and Oregon female specialty crop producers with food and beverage products to enter into new state and regional markets. The 90-day accelerator will provide training in product development, food safety, marketing and business development. The accelerator will include online modules, peer-to- peer learning, a women’s mentor network, and one-on-one consultation with experts. We will target female producers whose products contain at least 50 percent Washington-grown and Oregon-grown specialty crops. We will also target female producers with small operations (i.e., less than \$500,000 annual gross sales, less than 20 employees). Through this project, NASDA Foundation and its partners will train a total of 75 female specialty crop producers (45 from Washington, 30 from Oregon). After completing the accelerator, we anticipate the following outcomes: 100 percent of participating producers will increase their awareness of new markets for specialty crop products, 95 percent of participating producers will increase efficiency within their businesses as measured by the number of products reaching new markets or reduced costs, and 80 percent of participating producers will increase their sales of Washington specialty crop value-added products.</p>	\$249,921.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	\$4,792,479.94	8. Comparing and teaching small and micro farming scales for beginning farmers	<p>Aspiring farmers face numerous challenges in starting a new business including finding access to farmland and capital for investments. Farming is an expensive business to enter with the cost of land, infrastructure and equipment all very high. With the average age of farmers at 59 driving our need to recruit and train a new generation of farmers, these barriers must be addressed quickly. Recently, several high-profile small market farms have promoted intensive farming methods of specialty crops using only hand labor and two-wheeled tractors and claiming to be profitable and sustainable on under 2 acres of production. Often called micro-farming, this model is very appealing to new farmers who see it as an opportunity to enter farming with significantly reduced land and equipment investments. However, these farms are not fully transparent with their finances or labor needs, making it difficult to assess the viability or replicability of these methods. Throughout this project, the Organic Farm School (OFS) seeks to 1) research these farming methods, 2) teach the students at the OFS these methods as one alternative, 3) implement a trial of these methods with specialty crops at both the OFS student farm and Oxbow farm, 4) collect data on the cost and profitability of these methods, 5) conduct an evaluation of these methods in comparison to more traditional small-scale tractor-based farming practices with specialty crops and 6) present the results of this project through workshops, conferences and a publication. The project results will offer important information regarding the viability of two differing small-acreage, specialty crop farming methods, helping aspiring market farmers better plan their farm business and enhancing their competitiveness in the domestic specialty crop market.</p>	\$174,991.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	\$4,792,479.94	9. Supporting Small Farms: Optimizing a Regional Value-based Short Food Chain	<p>The goal of this project is to increase specialty crop sales to LINC Foods’ three largest customer segments (restaurants, institutional dining services, and regional grocery retail). We will work with professionals from each segment to address barriers and seize opportunities characteristic of their portion of industry. We will introduce an Artificial Intelligence application built to enhance customer ordering experience while freeing up staff time for customer relationship development. We will implement a promotional campaign that responds to the requests of our mission-driven institutional and grocery retail partners and presents regional specialty crops to large numbers of end-consumers. The Artificial Intelligence website/web-based application and mobile app will be undertaken in partnership with a developer and include design input from industry partners and customers. The application will provide streamlined SMS text and email communication with customers, improving the customer experience and leading to increased specialty crop purchases. The promotional campaign will work in partnership with institutional and retail partners to engage end consumers with information around the availability and qualities of regionally-grown specialty crops, resulting in an increase in purchasing and growth in business with these accounts. This proposal will allow the hiring of a Specialty Crop Promotion Officer, who will design a promotional model and lead its execution in partnership with mission-driven partners. Overall, this proposal will support the growth of sales by specialty crop producers through LINC Foods and help generate a total of \$1.1 million dollars in sales by the completion of the grant period.</p>	\$101,186.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	\$4,792,479.94	10. A Pesticide Application Risk Management Tool: The PestiSeguro/PestiSafe App	<p>The University of Washington’s Pacific Northwest Agricultural Safety and Health Center (PNASH) will lead and execute the specialty crop project, A Pesticide Application Risk Management Tool, The PestiSeguro/PestiSafe App (App), Kit Galvin, Project Manager. The purpose of this three-year training and education project is to minimize the human health, environmental, and financial risks to specialty crop producers/growers and employees from improper handling of agricultural pesticides used in production. The project goal is to provide a technological solution that addresses a long-standing problem: pesticide labels are in English, but most farmworkers employed in specialty crop production are Latino and Spanish is their primary language. Adoption of the App that contains the label safety information in English and Spanish will “enhance the competitiveness of specialty crops through greater capacity of sustainable practices...” This will be demonstrated by the number of growers/producers adopting this technology. The project objectives are to 1) scale-up the current App for the Washington State tree fruit industry to include at least six state specialty crops, 2) engage stakeholders through the Technical Advisor Panel (TAP) and Early Adopter Program (EAP), 3) disseminate the PestiSeguro/PestiSafe to the Washington specialty crop industry, 4) evaluate distribution; and 5) plan for the App’s financial and technical sustainability. Tasks include: scaling-up the technology, translating labels, establishing the TAP and EAP to engage producers/growers, promoting and disseminating the App annual crop meetings/conventions, collecting and analyzing data to assess App use and uptake, and reporting results and outcomes to funders and stakeholders.</p>	\$250,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	\$4,792,479.94	11. Enhancing the recruitment process in the WA tree fruit industry	<p>Attracting skilled workers is a necessity to maintain the competitiveness of Washington’s agriculture. Labor shortages are a big issue and have been hurting Washington’s tree fruit industry for several years, forcing farmers to leave their crops on the trees or harvest late with a resulting loss of storage life. Adding to this problem, recruiting in the agricultural sector in today’s job market is challenging and costly to producers. The Washington State Tree Fruit Association (WSTFA) will develop visual tools to increase the efficiency of the skilled workforce recruitment process in the Washington tree fruit industry. WSTFA will produce 2 bilingual pre-hire videos (English and Spanish), that will help attract and retain local and seasonal workers. Providing candidates with a general overview of the working environment, job demands, and physical expectations in farms or packinghouses will help reduce no-shows after interviews. These informative videos will also decrease recruitment costs and time spent by Human Resources in the hiring process. Additional onboarding videos for over 80 packinghouses will provide a more detailed description of the main job positions in a warehouse and explain what is expected from workers. Finally, WSTFA will produce a bilingual “Role Model” video, with interviews of hardworking people that have grown professionally with their companies. These last videos will help the industry retain skilled workers. A total of eight videos will be available on WSTFA’s website and distributed to over 1,500 tree fruit producers at no cost. USB drives with the videos will be offered as well.</p>	\$84,104.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	\$4,792,479.94	12. Assessment of smoke taint risk in vineyards exposed to smoke from wildfires	Washington State University will address the grape and wine industry's need for methods for assessing the risk to grape and wine quality associated with vineyard exposure to smoke from wildfires. During a vineyard smoke exposure, smoke aroma compounds are adsorbed into skin cells of the grape berries and later extracted from the skins into the wine during the fermentation process, resulting in wines with characteristic smoke related aromas and flavors. Smoke exposure events in several recent vintages have exposed the inadequacy of existing methods for analysis of grapes and wines for the presence of smoke related marker compounds in grapes and wines and for the evaluation of the risk to quality these markers signify. This interdisciplinary project will apply a top-down, systems-level metabolic network model using analytical tools and machine learning techniques developed in Dr. Ficklin's research program that will account for wine variety, smoke composition, and fermentation time to existing and new datasets created in Dr. Collins' ongoing project in risk assessment for smoke taint funded by the Washington State Grape and Wine Research Program. The purpose is to identify appropriate chemical markers and sensory techniques for the assessment of smoke taint risk associated with smoke exposed grapes.	\$243,279.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	\$4,792,479.94	13. Optimizing vineyard irrigation management by grape variety	<p>This project will be executed at Washington State University. Dozens of wine grape varieties are grown in Washington, making available a wide spectrum of wine flavors and styles. However, vineyard irrigation management strategies have not evolved in parallel with varietal diversification. The main strategy is a regulated deficit irrigation program customized to fit either red or white varieties. Yet growers have reported that many varieties show peculiar responses making irrigation management ambiguous and resulting in over irrigation of some varieties and under irrigation of others. This project will provide a detailed evaluation of the responses to imposed water deficit of 30 wine grape varieties grown in the same vineyard. This approach will allow us to develop a variety-specific decision support tool with respect to thresholds of soil- or plant-based measures of water status at which water is to be applied. It will also allow us to determine how environmental variation, such as a heat wave, impacts irrigation decisions, and to develop recommendations for possible mitigation practices. Results from this research will allow growers to optimize water use efficiency and water stress monitoring by variety. Moreover, the results will help identify the most suitable varieties to be planted as new vineyards continue to be developed in Washington. Finally, this project will give the industry valuable insight on compromises between plant stress, productivity, and longevity when multiple varieties are planted, especially in the context of climate change and the scenarios of drought and heat that it entails.</p>	\$245,324.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	\$4,792,479.94	14. Novel strawberry production and disease management systems	<p>This project, led by Washington State University, will generate needed information to support the expansion of the fresh-market strawberry industry by investigating new systems of production that utilize biodegradable and non-degradable plastic mulches and double-cropping with lettuce, a compatible high-value crop. Gray mold, caused by <i>Botrytis cinerea</i>, is one of the most significant foliar and fruit diseases of strawberry in Washington. Mulching and double-cropping can influence disease development, epidemiology, population structure, and management. Of particular importance is mulch impact on rain and irrigation droplet dispersal and subsequent risk of <i>B. cinerea</i> spore dispersal, especially into the soil where it may cause subsequent infection. Plastic mulches alone or in combination with fungicides or biological control organisms may help to prevent or delay germination of sclerotia or mycelia in the soil, thereby reducing the need for foliar fungicide applications. The objective of this project is to characterize the impacts mulch and double-cropping have on: 1) Crop growth, production, quality, and profitability; 2) The epidemiology of <i>B. cinerea</i>; 3) The population structure of <i>B. cinerea</i> to determine if there is overlap in the genetic structure of isolates colonizing strawberry and lettuce; and 4) Splash dispersal and <i>B. cinerea</i> infection risks based on mulch type. Management options for the soilborne phase of this disease will also be investigated. Completion of this project will support growers' successful transition to and management of day-neutral strawberry production, while also supporting production of lettuce, a second high-value crop that can be integrated into the same production system.</p>	\$249,963.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	\$4,792,479.94	15. Managing Potato Purple Top Disease: Leafhopper and BLTVA Landscape Ecology	<p>Purple top disease has been a persistent problem in Columbia Basin potato production for over 15 years. It is caused by a phytoplasma pathogen known as beet leafhopper transmitted virescence agent (BLTVA), and causes leaf purpling, aerial tuber formation, and plant decline. These foliar symptoms correlate with reduced tuber yield and quality and reduced economic returns. The beet leafhopper, <i>Circulifer tenellus</i>, is the vector of BLTVA. Current purple top management strategies target the vector with insecticides that are costly and often lead to outbreaks of other pests. Gaps in our understanding of the pathogen and vector, and their interactions, inhibit alternative disease management strategies. A primary objective of this project is to identify non-crop reproductive host plants of leafhoppers and to determine which of the leafhopper's host plants are susceptible to BLTVA. In a second objective, we will use molecular gut content analyses of leafhoppers to identify the plant sources of leafhoppers arriving in potato. In a final objective, we will develop new molecular tools to address three incompletely understood processes, including vectoring capabilities of leafhoppers, how to get consistent detection of the pathogen in infected plants, and BLTVA movement through the potato plant and its relationship with symptomology. Results will lead to the development of predictive models to forecast leafhopper and BLTVA risk based upon populations occurring in weeds prior to their arrival in potato. This multi-disciplinary project will be led by researchers at the USDA-ARS in collaboration with researchers at Washington State University.</p>	\$244,979.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	\$4,792,479.94	16. Novel diagnostic tools for Columbia root knot nematode isolates on potato	<p>Root-knot nematodes (<i>Meloidogyne</i> spp.) are devastating root pathogens with a broad host range. The Gleason Lab at Washington State University studies the Columbia root-knot nematode <i>Meloidogyne chitwoodi</i>, which can infect many high value crop plants, including potatoes. <i>M. chitwoodi</i> is particularly problematic on potatoes because it infects both roots and tubers, causing tuber defects that can significantly diminish the value of the crop. The four major isolates of <i>M. chitwoodi</i> in Washington differ in their host range and distribution throughout the state. It is impossible to distinguish these isolates by sight, but the isolates differ genetically. In this proposal, our objective is to compare gene expression profiles of <i>M. chitwoodi</i> isolates and identify specific genetic differences between isolates. We will use these polymorphisms to develop PCR-based diagnostic tools that can distinguish the specific nematode isolates. With this information, growers can make informed management decisions depending on the isolate(s) present in a given field. In addition, data about the genetic variability underpinning virulence amongst isolates will help with resistance breeding screens, ultimately assisting in breeding more durable potato resistance. Overall, establishing tools to differentiate <i>M. chitwoodi</i> isolates will have important consequences on nematode management and resistance breeding programs. The results from this research will help reduce the reliance on chemical controls for nematodes by allowing for better crop rotation planning, and it will ensure that nematode resistant potatoes (when released) are used appropriately on fields where they will be effective.</p>	\$245,746.00
Washington State Department of Agriculture	\$4,792,479.94	17. Effect of Trichoderma on disease control and growth improvement in nursery	<p>Washington State University will address the 2019 "control pests and diseases" WSDA SCBG funding priority by evaluating <i>Trichoderma</i> products for efficacy in controlling soilborne <i>Phytophthora</i> diseases on a variety of specialty crops. Individual objectives are 1) in-vitro studies of the interactions between <i>Trichoderma</i> spp. and <i>Phytophthora</i> spp. and their survival over a range of temperatures; 2) efficacy of <i>Trichoderma</i> as a potting mix amendment to prevent infection by <i>Phytophthora</i> and stimulate growth and improve outplanting performance on several plant hosts; 3) use of <i>Trichoderma</i> as a post-steaming treatment for disease prevention. As a result of this research, we will provide growers with management</p>	\$118,402.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			recommendations that will reduce the impact of Phytophthora root disease on several specialty crops. These crops include ornamental, native plant, and conifer nursery stock	
Washington State Department of Agriculture	\$4,792,479.94	18. Increasing Soil Nutrient Retention in Vineyards via Subsurface Irrigation	Washington State University will determine whether DRZ (Direct Root Zone) subsurface irrigation can reduce the amount of nitrogen required to meet desired fruit quality and yield goals. The hypothesis is: application of reduced volumes of water directly into the lower root zone will retain nutrients within the primary root zone within the top two feet of the soil profile; thus, reducing both (1) amount of nitrogen needed, and (2) reducing leaching of nitrates into groundwater. Glass collection tubes will permit soil water samples to be withdrawn periodically from a series of depths to six feet. Soil cores will also be taken to the same depths by a hydraulic coring machine. This study will document differential effects of surface drip and deep subsurface drip irrigation on nitrogen requirements and nitrate movement within the soil profile. Grapes from replicated treatments will be analyzed by commercial testing laboratories for components related to high quality premium wines, including BRIX, tannins, anthocyanin and acidity. Vine health will be determined through standard methods used to quantify plant water stress, growth, and fruit production in the vineyards during each growing season. Results will be presented at grower and professional meetings and assessment of potential adoption of improved practices will be determined from survey methods guided by an extension logic model developed for this project. Findings should be applicable to management of all irrigated perennial specialty crops, including small fruit, tree fruit, and hops.	\$247,484.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	\$4,792,479.94	19. Developing Dry beans in irrigated fields of Columbia Basin	Oregon State University-Hermiston Agricultural Research and Extension Center (OSU-HAREC) will evaluate the production of dry beans by developing scientifically based practical measures in Columbia Basin and disseminating results to stakeholders through grower meetings and field days. In the region, growers can suffer from low profitability during the production of wheat and corn, which are planted for 2 to 3 years as the main rotational crops to potatoes or onions, the high-value crops. The limited rotational crops may also result in accumulated pest pressure with time. Therefore, there is a need to introduce additional crop species into the current cropping system to increase crop diversities and potentially increase growers' profits. Dry adzuki beans are believed to be a possible rotational crop because of rising demand in domestic and export markets. The inclusion of the dry beans will also benefit the current cropping system by fixing biological nitrogen, conserving water (reduced irrigation requirement), improving soil health, and suppressing pests and diseases. However, agronomic management practices need to be studied and developed for the crop. Through greenhouse studies and field trials, we aim to evaluate the adapted varieties and develop the optimum nutrient, water, and pest management practices. The research findings on the best agronomic practices for the new crops will be introduced to growers and field consultants through various extension activities. The execution of this project will benefit growers of the Columbia Basin by increased crop sustainability and new market development	\$195,844.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	\$4,792,479.94	20. Factors Affecting Persistence of Listeria monocytogenes Need to be Identified for Evaluation and Prioritization of Interventions	<p>The Center for Produce Safety will partner with Cornell University to identify strategies that more effectively control Listeria persistence in produce packing and fresh-cut facilities. The foodborne pathogen Listeria monocytogenes can survive over time in food processing environments. These “resident” Listeria strains increase the likelihood for finished product contamination, recalls, and outbreaks. Advances in sequencing allow for enhanced discrimination between Listeria strains, such as those that may be unique to a specific facility. This results in improved traceback from listeriosis patients to the facility where the implicated food was prepared. However, sequencing advances have also enabled us to better understand how a unique Listeria strain may survive and spread in a facility over time. To date, there is little peer-reviewed research on how to prevent, eliminate, or manage a resident Listeria strain in a facility, particularly for the produce industry. This project will review published and unpublished data to identify factors that may contribute to a Listeria strain persisting in a facility, and to validate potential interventions suitable for produce facilities using experiments in commercial facilities as well as computer modeling. This project will provide industry with tools to (i) help identify what characteristics of their facilities may allow a Listeria strain to persist, and (ii) select and justify interventions that are used to prevent, eliminate, or manage Listeria persistence.</p>	\$186,953.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	\$4,792,479.94	21. Assessing the soil health of Eastern Washington specialty crops: hops, onions, potatoes, pulses, sweet corn, tree fruit, and wine grapes	Soil health is gaining prevalence as a lens through which to examine sustainable agricultural production. Interest and debate around management practices, impacts, and assessment of soil health are often specific to region or cropping system. A baseline assessment of soil health across specialty cropping systems has yet to be completed in Washington. This project is designed to assess the soil health of specialty crops in Eastern Washington. Target cropping systems include hops, onions, potatoes, pulses, sweet corn, tree fruit, and wine grapes. The Natural Resources Assessment Section (NRAS) of the Washington State Department of Agriculture (WSDA) in collaboration with faculty at Washington State University (WSU) will assess baseline soil health on commercial specialty crop farms. Project partners will select participants with commercial production sites. Grower-determined “best” and “worst” soils will be sampled in early and late seasons and soil health indicators will be measured. Penetration resistance will be assessed in the field. Soil samples will be collected and analyzed for bulk density, pH, texture, extractable nutrients, total carbon, Permanganate Oxidizable Carbon (POXC), Mineralizable Carbon respiration- 4-day incubation (MinC), Autoclaved Citrate Extracted (ACE) protein, and Potentially Mineralizable Nitrogen (PMN). Results will be summarized and interpreted in individual soil health reports shared with participants. WSDA and WSU will analyze and summarize the information in reports and publications. This project will provide an initial assessment of soil health in Washington to build a collaborative state-wide effort that improves soil health management through development of a regional index.	\$500,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	\$4,792,479.94	22. Kittitas County	Kittitas County has a new and currently rapidly expanding specialty crop production area. The north facing slopes on the southern hills of the Kittitas Valley is an ideal location for growing apples like Honeycrisp, Cosmic Crisp and other large growing multi-colored apples in the Honeycrisp family. The climate in this new production area that is rapidly expanding has summertime temperatures that are seven to ten degrees cooler than other production areas and it grows a high-quality apple with reduced size and increased quality and storability. This project will help to promote and encourage the introduction of these new varieties into an area that is naturally suited for growing them. The area has the perfect climate for growing these types of apples but is a high-risk area for the due to the risk posed by nearby apple maggot populations. There are documented apple maggot populations to the north and west of the location where the expansion is occurring. This program will help the county have control methods in place that will help keep the area in the vicinity of these orchards an apple maggot pest free area. This specialty crop block grant will provide a pathway forward for the county to manage the pest in such a way that the pest risk is significantly reduced for the specialty crop producers and processors in our county. The program will help manage the risk of apple maggot as the area continues to develop.	\$150,000.00
Washington State Department of Agriculture	\$4,792,479.94	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$383,241.00
West Virginia Department of Agriculture	\$295,934.11	Establishment of a Model Agricultural Education Processing Program for Specialty Crops	Mineral County Technical Center Agricultural Education Department will partner with West Virginia University Extension Service and West Virginia Department of Education Office of Child Nutrition to train students and local farmers to process specialty crops utilizing a simulated workplace within a laboratory environment at the Technical Center that will include a flash freezer, vacuum packing machine, and steamer.	\$25,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
West Virginia Department of Agriculture	\$295,934.11	Feasibility Study for the West Virginia Economic Development Initiative in Cider Apple and Cider Production	West Virginia University, Davis College of Agriculture and Natural Resources and Cooperative Extension Service, will conduct a feasibility study to assess the market for and economic viability of hard cider production, which will assist in development of the cider apple and cider production industry in West Virginia (WV). We will provide targeted production costs, marketing and legal analysis, and broad-based educational programs, to displaced coal miners, veterans, and small farmers in order to explore new ways to add additional value to WV's specialty crops and uncover new income opportunities for growers. This effort compliments existing rural economic development strategies in the state that focus on agricultural production and agritourism, utilizing WVU's unique resources.	\$24,583.00
West Virginia Department of Agriculture	\$295,934.11	Increased Market Opportunities for Specialty Crops	Heart and Hand House, Inc., will promote increased production and consumption of specialty crop products and increase opportunities for the sale and utilization of specialty crop products by aggregating, processing, packaging and delivering product through its Community Garden Market.	\$25,000.00
West Virginia Department of Agriculture	\$295,934.11	Increasing the Understanding of Microbial Threats to Food Safety by the Examination of Agricultural Water	Food Safety, particularly with the advent of the new Food Safety Modernization Act (FSMA) Produce Safety Rule (PSR) provisions, has brought about the need for a deeper understanding of the ecology of microbial contaminant indicators in specialty crops. The West Virginia Department of Agriculture will analyze agricultural water for farms with specialty crops for the quantitation of E. coli for use in compliance with the FSMA PSR. Meta data will be collected along with the samples to provide educational resources to West Virginia farmers to make informed decisions on growing areas and water sources.	\$25,137.58
West Virginia Department of Agriculture	\$295,934.11	Mobile Maple Outreach and Education: Learning about Maple Syrup Production and Consumption at Fairs	Experience Learning will develop hands-on demonstrations and educational materials to use with their mobile maple syrup trailer. Two staff members will attend five maple syrup festivals to provide demonstrations to increase consumer awareness about the value and uses of maple syrup. Experience Learning will also work with producers to develop, print, and sale a maple syrup cookbook. This will increase consumer awareness of how to use maple	\$17,934.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			syrup "beyond the pancake". It will also serve as a tool to promote and market producers that provide recipes for the cookbook.	
West Virginia Department of Agriculture	\$295,934.11	Mountain Crops to Cash Crops	The Vagabond Chef and Folklore PR will shine a media and culinary spotlight on specialty crops from twelve different West Virginia farms by creating video content for social media and bringing ingredients back to The Vagabond Kitchen Restaurant in West Virginia. Available crops in the region include vegetables (tomatoes, cucumbers, peppers, greens) and value-added specialty crops (jams, jellies, salsas, maple syrup, honey). Ingredients will be created into a special dish that will be featured for the month following each video release to leverage audience sharing to grow the reach and interest in locally grown specialty crops. The project will educate farmers on ways to maximize the exposure by continuing to tell their story using social media and other public relations techniques.	\$22,200.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
West Virginia Department of Agriculture	\$295,934.11	Table Grapes for Small/Beginning Farmers and West Virginia School Children	The West Virginia University (WVU) Berkeley County Agriculture and Natural Resource Extension Service will conduct a field trial to research and evaluate the performance of several varieties of seedless table grapes under open-field growing conditions with pest management as a key factor at the beginning of the project. WVU Extension Service will use this project to develop educational programs for beginning farmers to encourage them to grow table grapes for the local market and the Farm to School or Institution program. WVU Extension Service will provide videos and hand-on learning activities to teach the proper planting and management of table grapes. The Berkeley-Jefferson County area is the tree fruit growing area of the state but new and beginning farmers would like a crop that is easier to handle and ready for harvest in a shorter time frame. Unlike tree fruit that takes three to five years to produce a salable crop, table grapes can offer income the year after planting and last for 20 to 30 years. Children and adults will taste test the varieties grown to encourage producers to grow them for marketing locally. Output from the project will include education materials including reports, power points, videos, publications, website postings, and farm tours to showcase varieties, growing systems and management practices. The goals of this project are to provide learning opportunities for growers and consumers alike throughout the state and increase the number of small farmers growing table grapes for local consumption.	\$17,471.00
West Virginia Department of Agriculture	\$295,934.11	The Potomac State College Mobile Farm-to-Pizza Oven Project	The Potomac State College (PSC) Sustainable Agriculture Program will address several meaningful goals in relation to the growing, distribution, marketing, education, and value-added production of specialty crops in our region. Specifically, the program will attain a mobile, innovative, 'turn-key' pizza oven designed and built to meet the demand of evolving food and farm business models to increase the overall production of specialty crops. PSC instructors and students will use the mobile oven to prepare high quality, wood-fired pizza with local ingredients, support local growers and educate youth in our region about value-added, farm grown products.	\$24,996.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
West Virginia Department of Agriculture	\$295,934.11	West Virginia Soil Tunnel Trailer II	The West Virginia Conservation Agency Soil Tunnel Trailer II is a multi-use, mobile soil, water, and agriculture specialty crops education unit made available to serve West Virginia. The mobile unit will travel throughout the state to bring agriculture and conservation education to the communities of the state. The larger than life interior is an exciting learning experience for children and adults alike. The program is flexible in lesson planning and can be used as a classroom in as school setting or a walk-through unit at public events.	\$25,000.00
West Virginia Department of Agriculture	\$295,934.11	West Virginia Specialty Crop Producer Education Opportunities	The West Virginia Department of Agriculture (WVDA) provides funding through the Specialty Crop Block Grant Program to conduct several educational and cost share opportunities available statewide to enhance and increase specialty crop production. These projects are designed to build specialty knowledge and capacity as well as encourage growers to increase their volume of specialty crops and extend their market reach. The Good Agricultural Practices (GAP) Audit cost share program is funded for this purpose and partners with growers, agriculture service providers and the growing number of school gardens and high tunnels throughout West Virginia. Fresh growers as well as value-added specialty crop producers are the beneficiaries of the Better Process Control School and Junior Master Gardener facilitator course trainings.	\$35,000.00
West Virginia Department of Agriculture	\$295,934.11	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$53,597.67
Wisconsin Department of Agriculture, Trade and Consumer Protection	\$1,377,394.25	Aerial Imaging for Nitrogen Management of Potatoes	The University of Wisconsin will promote environmentally and economically sustainable potato production by developing methods to assess crop nitrogen status and yield potential using aerial imaging and will disseminate results to stakeholders through an industry-focused workshop, grower meetings, field days, articles in trade journals, and newsletters.	\$71,771.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Wisconsin Department of Agriculture, Trade and Consumer Protection	\$1,377,394.25	Assessing the Economic Value of Clean Seed Potatoes and Reduced Risk Fungicides for Disease Control in Wisconsin Potato Systems	This project, led by the University of Wisconsin–Madison Department of Plant Pathology and Division of Extension in conjunction with Wisconsin potato growers, aims to compare the cost, and disease and quality outcomes of: 1) use of early versus late generation seed potatoes in avoidance of tuber diseases associated with seed (silver scurf and black dot); and 2) use of reduced risk fungicides in management of foliar diseases (early blight and late blight) by assessing the economic return on investment of such practices through proposed field trials and analyses of archived yield and quality data.	\$89,306.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	\$1,377,394.25	Assessing the Influence of Cranberry Pollination on Honey Bee Hive Health	The Gratton Lab at the University of Wisconsin–Madison will develop a better understanding of how honey bee hive management and use of the bees for cranberry pollination influences hive health in order to develop evidence-based recommendations for beekeepers to keep their bees healthy while pollinating cranberry and will disseminate results to stakeholders through grower meetings and online and printed materials.	\$98,503.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	\$1,377,394.25	Attracting Wild Pollinators with Native Wildflower Plantings to Improve Pollination Services in Cranberry	The University of Wisconsin–Madison will assess the impact of wildflower plantings on the species richness and abundance of wild pollinators in cranberry beds, determine the impact on fruit yield, and provide recommendations to growers on how to establish wildflower plantings for improving pollination services in cranberry.	\$98,569.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	\$1,377,394.25	Comprehensive Education of Farmers and Consumers on Wisconsin Elderberry	The Savanna Institute will stimulate farmer adoption and consumer awareness of elderberries in Wisconsin by developing and deploying a comprehensive array of on-farm, print, video, online, and in-person educational programming.	\$55,775.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Wisconsin Department of Agriculture, Trade and Consumer Protection	\$1,377,394.25	Cost-Share Program to Improve the Safety of Wisconsin Fresh Produce	The Wisconsin Apple Growers Association (WAGA) will increase the marketability of Wisconsin fresh fruits and vegetables and decrease the risk of food-borne illness by providing cost sharing for Wisconsin fresh produce growers to procure the necessary supplies, training, and record-keeping systems to be compliant with the new federal Food Safety and Modernization Act (FSMA) Produce Safety Rule.	\$99,500.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	\$1,377,394.25	Enhancing Food Safety in Wisconsin Fruit and Nut Orchards with Livestock Integration	The Savanna Institute will improve the viability and food safety compliance of Wisconsin fruit and nut orchards that use livestock as a management tool by educating producers and food safety professionals via a comprehensive array of print resources, webinars, videos, in-person trainings, and field days.	\$56,805.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	\$1,377,394.25	Evaluation of the Cordon Trellis System for Growing Currants and Gooseberries	Two Onion Farm in Belmont, Wisconsin will evaluate the cordon trellis system of growing currants and gooseberries as a method to reduce labor needs and improve fruit quality. Results will be disseminated to stakeholders through conferences, a field day, and publications.	\$57,185.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	\$1,377,394.25	Field Strategies to Increase Productivity and Decrease Costs for Ginseng Growers	More than 180 new and experienced growers, including 30 percent from the Hmong community, are served by the Ginseng Board of Wisconsin (GBW) and seek to offset the marketing uncertainty resulting from increased tariffs by decreasing production costs through: 1) investigating growth regulators for debudding; 2) comparing low, medium, and high cost disease management programs to increase crop yield and root quality; and 3) testing new plant protection products.	\$99,494.00
Wisconsin Department of Agriculture, Trade and	\$1,377,394.25	Implementing Environmental Best Management Practices for Socially Disadvantaged Farmers	Fondy Food Center will work with farmers, especially Hmong American market growers to implement environmental best management practices focusing on nutrient management plans, erosion management plans and water irrigation systems to maximize yield, while minimizing negative environmental impacts.	\$32,938.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Consumer Protection				
Wisconsin Department of Agriculture, Trade and Consumer Protection	\$1,377,394.25	Improving the Effectiveness of Participatory Vegetable Trials for Wisconsin Organic Growers	The Seed to Kitchen Collaborative (SKC) will increase the effectiveness of on-farm participatory vegetable variety trials by evaluating factors that impact farmer response rates and predictive power of replicated on-station trials and will identify high performing carrot and cucumber varieties for Wisconsin growers through replicated variety trials at research stations in combination with a novel participatory evaluation approach.	\$99,954.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	\$1,377,394.25	Researching a Value-Added Supply Chain for Wisconsin Strawberries and the Institutional Health Care Market	Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP), Division of Agricultural Development (DAD) staff will test out a new market for Wisconsin strawberry growers by researching supply chain viability for the documented demand for local strawberry products in Wisconsin health care facilities.	\$25,000.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	\$1,377,394.25	Selecting Improved Potato Varieties for Wisconsin Organic Growers and Markets	The Seed to Kitchen Collaborative will evaluate advanced red and yellow potato breeding lines through research station field trials and participatory trials on organic farms to identify lines with excellent performance under organic management, including good yield, resistance to pests and diseases, and good flavor, and will disseminate research findings through growers meetings, field days and web-based information resources.	\$99,903.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	\$1,377,394.25	Specialty Crop Promotion and Education	Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP), Division of Agricultural Development (DAD) staff will work through DAD's Something Special from Wisconsin™ (SSfW) and Alice in Dairyland programs to promote Wisconsin specialty crops. DAD staff will have a SSfW specialty crop exhibit space at the National Restaurant show in Chicago to promote products from specialty crops. SSfW and Alice in Dairyland will highlight specialty crops throughout the grant period using social media channels and promotional videos.	\$45,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Wisconsin Department of Agriculture, Trade and Consumer Protection	\$1,377,394.25	Strengthening Wisconsin's Specialty Crop Growers Through Food Safety Liability Research and Education	Farm Commons will reduce the legal vulnerability of specialty crop growers in Wisconsin to liability for a food safety outbreak by providing education and resources on food safety liability avenues and insurance policies through a food safety liability online course, guide, and facilitating a cohort of Wisconsin specialty crop producers as they resolve legal risk with insurance.	\$79,650.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	\$1,377,394.25	The Wisconsin Apiary Outreach Initiative	The Wisconsin Apiary Outreach Initiative seeks to improve honeybee health and reduce hive mortality by providing outreach and educational training on honeybee best management practices for Wisconsin beekeepers.	\$60,000.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	\$1,377,394.25	Understanding the Population Dynamics of Spotted-Wing Drosophila (<i>Drosophila suzukii</i>) in the Landscape	The University of Wisconsin–Madison will work to improve its understanding of spotted-wing drosophila (<i>Drosophila suzukii</i>) population dynamics in Wisconsin by measuring the genetic diversity of populations at various locations, landscapes, and times of year to increase our knowledge of population movement and improve management strategies for this pest.	\$97,421.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	\$1,377,394.25	Grant Administration	Ensure that the State Agency and sub-awardees abide by Federal and State requirements and regulations by performing pre-award and post-award activities to administer Specialty Crop Block Grant Program funding.	\$110,154.49

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Wyoming Department of Agriculture	\$362,907.69	1. Development of Chickpeas Irrigation and Nutrient Management Program in the Semi-Arid Region Of Intermountain West	In this project, the University of Wyoming will assess the variety performance, best irrigation, and nutrient control programs suited for chickpeas in the semi-arid region of inter-mountainous west. Local producers need new cropping options that can be grown along with historically traditional crops such as barley and sugar beet. Field experiments will be conducted at the University of Wyoming Powell Research and Extension Center. The information and data gained from this study will be disseminated through a University of Wyoming Extension, growers/educator workshops, extension and Agricultural Experiment Station (AES) Bulletins, AES field days and peer-reviewed journal articles.	\$32,461.00
Wyoming Department of Agriculture	\$362,907.69	2. Producer Specialty Crop Research Grants	Wyoming Department of Agriculture will award six small grants to conduct on farm research by specialty crop producers in cooperation with a technical advisor that can improve specialty crop problems associated with specialty crop production and be shared with others through producer/processor publications, meetings and/or field days. Producer research grants will be awarded to producers to research specialty crop production on season extension, pest and weed management, alternative crops, conservation, seed production or other specialty crop related topics. Projects must be developed, coordinated and conducted in cooperation with an advisor from University of Wyoming (WYO), one of the Wyoming Community Colleges or other Ag organizations considered experts in the area of research.	\$49,026.00
Wyoming Department of Agriculture	\$362,907.69	3. Eastern Wyoming Fruit Demonstration and Research Orchard	A fruit orchard will be planted and managed by the University of Wyoming researchers at the Sustainable Agriculture Research and Extension Center (SAREC) to provide educational opportunities for agriculture stakeholders concerning the variety selection, attrition rates and care of specialty fruit crops in Eastern Wyoming. The project will provide a hands-on learning opportunity for stakeholders and serve as a resource for collecting science-based data that can be shared throughout the state. The project will provide education to stakeholders related to fruit variety selection and care and management of fruit plants (i.e. planting, watering, pruning, nutrient management, etc.), insect, and disease management, soil fertility and quality	\$20,788.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			management, rodent and large mammal management, invasive plant management, start up and economic viability, and irrigation management.	
Wyoming Department of Agriculture	\$362,907.69	4. WDE Edible Landscapes & Cafeteria Gardens	Wyoming Department of Education Edible Landscapes and Cafeteria Gardens will increase the number of specialty crops grown and consumed at Wyoming Schools or Child Care Centers through issuance of sub-grants to construct Edible Landscapes or Cafeteria Gardens and provision of training for the school/center and community on GAP/Food Safety for School/Center Gardens. This project will increase the volume and type of specialty crops grown specifically for consumption in school or child care centers participating in the USDA Child Nutrition Programs. Access to fresh specialty crops in Wyoming is seasonal and limited to area production. In this manner, the school or child care will choose what specialty crops best fit their meal program and either landscape the area or plant a garden to specifically grow crops to be used in their meal programs.	\$22,482.00
Wyoming Department of Agriculture	\$362,907.69	5. Effects of Seeding-Rates And Row-Spacing on Dry Bean Yield And Water Dynamics	In this project, the University of Wyoming will evaluate the effect of different dry bean plant densities on different row spacing for different dry bean genotypes under three different irrigation rates on yield, dry bean productivity and crop water and light use efficiency. The study will be conducted at the University of Wyoming Powell Research and Extension Center. The information and data gained from this study will be disseminated through a University of Wyoming Extension, growers/educator workshops, extension and Agricultural Experiment Station (AES) Bulletins, AES field days and peer-reviewed journal articles.	\$23,998.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Wyoming Department of Agriculture	\$362,907.69	6. Identifying Fertilizer and Water Requirements for Hops Varieties Grown in Wyoming	<p>In order to optimize the yield and quality of hop yards grown in Wyoming, the College of Agriculture, Wyoming Agricultural Experiment Station, University of Wyoming Extension, and Northwest College have assembled a team to test the effects of different fertilizers, irrigation regimes, and hop varieties at two sites (Powell and Lingle). The Powell site is already established, and minimal infrastructure upgrades will be required. The Powell site hosts ten varieties that are positioned in a replicated trial with five plants per experimental unit (20 plants total for each variety). Although the Powell varieties are already fixed, new rhizomes will be used as replacement if stand failures are observed in the spring of 2019. At SAREC, we are proposing to establish a 0.12-acre hop yard with four varieties as a manageable research plot that can be extrapolated to represent larger acreages. Varieties at SAREC will be selected based on their successfulness at within trials at the Univ. Nebraska Panhandle Research station at Scottsbluff Nebraska, 30 miles from SAREC. Expected outcomes are reports that contain cone yield and quality data (alpha- and beta-acid concentrations) as well as outreach events and bulletins. The main activities will plot maintenance, treatment applications, and data collection. Data collection will include measurement of mid-season plant traits such as leaf chlorophyll and estimations of evapotranspiration.</p>	\$32,234.00
Wyoming Department of Agriculture	\$362,907.69	7. Rotational Field Pea Soil and Crop Enhancement Program	<p>Rabou Farms, Inc. will work cooperatively with the Wyoming Department of Agriculture in communicating the discoveries of the following objectives through the “Rotational Field Pea Soil and Crop Enhancement Program: Three varieties of field peas will be planted in different field locations in Laramie County, Wyoming. Soil tests will be taken in each field at various stages to determine changing levels of macro and micro nutrients and organic matter. A subsequent crop, to be determined at planting time, will be planted the following spring and following a fallow year to determine enhanced production or quality resulting from the implementation of peas in the crop rotation when compared with standard rotations. Fields will be monitored during the growing cycle for the presence of pests, diseases and weeds and will be recorded. End use and economic added value of the crop will also be noted. The results of this project will serve as valuable education for rotational crop possibilities and benefits to Wyoming organic farmers.</p>	\$28,255.33

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Wyoming Department of Agriculture	\$362,907.69	8. Practical Specialty Crop Information for Beginning Wyoming Producers	The University of Wyoming Extension and Small Acreage Issue Team partner organizations will write, edit, publish and disseminate specialty crop articles to potential and existing specialty crop growers in Wyoming through the popular and well-known medium of Barnyards & Backyards magazine. These articles will increase the knowledge of potential issues faced by those interested or currently growing specialty crops in Wyoming and the strategies by which they can successfully address these issues. (Such as dealing with challenging soil conditions, extremely variable weather conditions, irrigation challenges, increasing pollinator habitat, and a variety of other crop-relevant subjects) We expect that 100 potential producers will report a gain in knowledge about successfully growing specialty crops in Wyoming's challenging environment.	\$25,312.00
Wyoming Department of Agriculture	\$362,907.69	9. Specialty Crop Season Extension Education through Geodesic Dome and Hoop House Building Workshops	Wyoming Food for Thought staff with the help of contractors will educate individuals through hands on workshops on the construction and use of low-cost season extension greenhouses for weather sensitive specialty crops. We will focus on nonprofit organizations, educational institutions, and the Wind River Indian Reservation. Workshop participants will be surveyed to gauge knowledge gained on construction and use of hoop houses or domes to produce or expand production of specialty crops. This proposal is to support 7 seasons extending (High tunnel or Geodesic Dome) workshops in Wyoming. Construction time (50 hours per project) will also be used to educate participants on the benefits of specialty crop production. It is the intention of this project to continue to increase interest in the use of low-cost cold frame greenhouses and encourage the adoption of their use for the production of fresh vegetable in Wyoming. The workshop participants will be surveyed for increase in knowledge of geodesic dome greenhouse construction and use.	\$35,833.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Wyoming Department of Agriculture	\$362,907.69	10. Wyoming State Fair Horticultural Program To Increase Awareness of Specialty Crops	<p>The Wyoming State Fair will increase the awareness of consumers on how to produce and preserve specialty crops by expanding and maintaining specialty crop horticultural activates on the State Fair grounds. The purpose of this project is to increase the awareness of individuals visiting the State Fair grounds. Approximately 38,000 individuals attend the Wyoming State fair each year. There are on average an additional 500 events hosted on the fairgrounds throughout the year. The management of existing edible landscaping displays, season extension high tunnels, fruit orchard, pollinator habitat displays, and the horticultural pavilion require the care of a horticultural expert. Proper management of these displays will provide continuing educational experiences for consumers and producers. This will be accomplished by contracting with a part time horticulturalist. The project continues to be timely as there is no funding available within the State fair budget to provide the needed management to maintain and expand specialty crop activities on the fairgrounds.</p>	\$41,667.00