USDA Agricultural Marketing Service

Transportation and Marketing

Specialty Crop Block Grant Program

Fiscal Year 2020 Description of Funded Projects

Number of Grants Awarded: 56
Number of Sub-award Project: 687
Amount of Funds Awarded: $72,488,098.70
For more information, please visit the program's website: https://www.ams.usda.gov/scbgp
NOTE: The project descriptions below were provided by the grant recipients. (File updated November 17, 2020)

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Alabama Department of Agriculture and Industries	$516,633.90	Acquire Local Specialty Crop Purchase Data from Retail Stores with the Intent to Increase Local Purchases	Sweet Grown Alabama, in conjunction with the Alabama Department of Agriculture & Industries, plans to increase the amount of locally grown specialty crops purchased by retail grocery stores and distributors in Alabama by incentivizing stores for their local procurement data. This data will be shared with producers across the state to express the demand for specialty crops statewide to help farmers make planting decisions. Currently in Alabama, there is a minimal amount of locally grown specialty crops being sold in retail grocery stores. In an effort to increase the amount of local specialty crops offered in retail stores, Sweet Grown Alabama, in conjunction with the Alabama Department of Agriculture & Industries, plans to purchase local procurement data from a pilot group of retailers and distributors. The goal is for retail stores to use those funds to increase the amount of local specialty crops purchased and subsequently offered in their stores. Data collected will be shared with producers to encourage planting of more specialty crops in the state to meet demand.	$75,492.44

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Alabama Department of Agriculture and Industries	$516,633.90	Alabama Fruit and Vegetable Growers Association Education and Promotion Campaign	The Alabama Fruit and Vegetable Growers Association is a member driven, 501(c)(5) association that works to improve the specialty crop industry through research, advocacy, education and promotion. The association is composed of all fruit and vegetable farmers from across Alabama, specialty crop researchers, and industry partners. The association supports and implements educational programs across Alabama, including an annual conference that commonly draws over 200 specialty crop producers. If a SCBG is awarded, the association will: 1. Hold multiple grower meetings across the state, in partnership with the Alabama Cooperative Extension System's Commercial Horticulture Team, over the duration of the grant; 2. Promote specialty crops through multiple farmer market events and social media campaigns; 3. Plan and execute an annual conference that will include researchers from across Alabama and the Southeast to educate over 200 farmers on topics including improved methods of specialty crop production, marketing and food safety; and 4. Provide flash drives containing over 25 hours of educational content to all program participants and start a YouTube channel for farmers.	$25,000.00
Alabama Department of Agriculture and Industries	$516,633.90	Evaluating the Economic Benefit of BT Toxins and Foliar Sprays in Alabama Sweet Corn	Auburn University and Alabama Cooperative Extensive System will conduct research trials to evaluate the efficacy of existing Bacillus thuringiensis (Bt) traits in sweet corn as well as the efficacy of currently recommended foliar sprays. The Bt toxins used in sweet corn have developed resistance to target pests, including corn earworm and fall armyworm, forcing growers to resort to additional, expensive chemical applications. Organic growers have few options with foliar Bt sprays, but these utilize the same toxins that have developed resistance and may no longer be as efficacious. This project will evaluate both the status of Bt resistance in Alabama sweet corn and the chemicals used as foliar sprays to control major ear-feeding pests. An economic analysis will be done to identify which control method is the most cost-effective for local growers. Results from this project will be reported through Extension publications, videos, and workshops in an effort to raise awareness on resistance and cost-saving measures for sweet corn growers.	$38,609.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Alabama Department of Agriculture and Industries	$516,633.90	Exploring Innovative Peach Rootstocks and Training Systems for High-Density Highly Efficient Orchards in Alabama	Auburn University will partner with the ADAI to enhance the competitiveness of peach production in Alabama through investigating the performance of improved disease resistant peach rootstock varieties. Experimental trees will be cultivated under highly efficient innovative Perpendicular-V training system. Results will be disseminated to stakeholders through grower meetings, field days, printed materials and web outlets. The outcomes will lead to sustainable peach production practices resulting in reduced inputs, increased yield, increased efficiency, improved fruit quality and increased economic return to the grower, and will contribute to sustainable cultural pest control, improved food safety and increased consumption of specialty crops. An experimental plot consisting of 'Cresthaven' variety grafted on 7 newly developed size-controlling and disease (Armillaria Root Rot, Peach Tree Short Life) resistant peach rootstock trained to a highly efficient Perpendicular -V training system and located at the Chilton REC, Clanton will be utilized. We will use five replications of four-tree experimental unit blocks arranged in a Randomized Complete Block Design to record data and determine rootstock cultivar responses. Project findings will be disseminated through diverse educational programs and delivered to the state constituents through field demonstrations, workshops, grower meetings, printed, video and other web designed materials.	$39,999.60
Alabama Department of Agriculture and Industries	$516,633.90	Improving Nursery Production by Reducing Root Zone Temperatures	Auburn University will partner with Alabama Department of Agriculture and Industries to develop strategies to reduce root zone temperatures in container nurseries. This project will decrease crop loss and improve plant growth through evaluation and demonstration of novel methods to reduce heat gain in nursery containers. This project will involve trials at research centers and collaborating farms across the state. The goal of this project is to improve yield and reduce damage in container production due to elevated RZT by increasing awareness of the problem and evaluating and demonstrating alternative RZT cooling methods.	$40,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Alabama Department of Agriculture and Industries	$516,633.90	Improving Turfgrass Drought Tolerance Using Biofertilizer	The use of endophytic symbionts is a promising natural and an effective alternative to sustain and improve plant growth and enhance plant environmental stress tolerance without damaging the environment or human well-being. The specific objective of this project is to develop a cocktail of beneficial fungal endophytes that can be used to improve turfgrass drought tolerance, therefore conserve water usage. Specifically, we will optimize the production of large quantities highly concentrated eight beneficial fungal endophytes to be applied as biofertilizer to exciting or new turfgrass. The biofertilizer will improve grass water usage and drought tolerance, therefore saving water and improve turfgrass quality. All fungal endophytes used in this study were isolated from naturally growing plants of different Alabama habitats and they have been proven beneficial to various crops including Bermudagrass. The outcomes of the project include determination of the best concentration of these beneficial endophyte cocktail that can be used to improve Bermudagrasses and Bahiagrass drought tolerance and water usage. The research finding will develop a bio-fertilizers that is essential for many Alabama industries such as golf courses as well as beneficial to residential and business lawns.	$39,934.00
Alabama Department of Agriculture and Industries	$516,633.90	Marketing and Promotion Campaign for Alabama Watermelons	The Gulf Coast Watermelon Association will promote the Alabama watermelon industry by utilizing our Industry Representative to educate children and adults about the health benefits and versatility of watermelon consumption through school/library visits, retail promotions and farmers' market promotions. Further, the advertising and promotion will enhance sales and benefit the Alabama watermelon industry as a whole. The Industry Representative will be The Gulf Coast Watermelon Association Queen for the current year. Each year a young woman is selected based on interview skills, knowledge of agriculture and watermelon industry, approachability, poise, and personality. Her role is to be a spokesperson for our Association and for the watermelon industry. She will interact directly with the public.	$11,145.39

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Alabama Department of Agriculture and Industries	$516,633.90	Pesticide and Safety Training Program for Specialty Crops	The Alabama Green Industry Training Center, Inc.'s mission is to promote the professionalism of the Green Industry through education and training, and looks to provide training to the growers and users of Greenhouse, Nursery, Floriculture, and Sod specialty crops to improve their skills in areas including business operations, vehicle & equipment efficiencies, safety practices, pest identification, pesticide safety, and specialty crop use.	$21,714.66
Alabama Department of Agriculture and Industries	$516,633.90	Plant Something: Alabama	The Alabama Nursery & Landscape Association (ALNLA) will continue exposing consumers to the national Plant Something marketing campaign while 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, we hope to increase sales of Alabama grown ornamental, floriculture, and vegetable specialty crops. The purpose of this project is to increase the sales volume of Alabama grown specialty ornamental and floriculture crops, through third phase development and promotion of the PlantSomethingAlabama.com Consumer Horticulture Website and associated marketing campaign.	$25,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Alabama Department of Agriculture and Industries	$516,633.90	Preventing Vegetable Yield Losses on Alabama Small Farms through IPM Demonstrations and Direct Farmer Training	This Auburn University/Alabama Cooperative Extension proposal aims at providing critical insect pest monitoring and integrated pest management training to specialty crop producers with the long-term goal of reducing yield losses to under 10 percent and improving farm income by 25 percent from major crops by implementing three levels of pest management. This project will establish six new IPM demonstration locations across various communities in Alabama, with emphasis on low-resource and veteran farms that need the support; each location will become the site for further training of all producers and educators interested in new information. In addition, this project will revise current major publications such as the SE Vegetable Production Handbook, the High Tunnel Crop Production Handbook, and Organic/Urban IPM Slide Charts; every farmer reached through this project will receive free copies of all publications at meetings without cost. Many digital media resources will also be developed that include blog articles, webinars, pest scouting and management videos, virtual farm tours, and Facebook Live weekly events to reach 500 produced directly. We will also provide annual evaluation data via well-designed posters and presentations. All digital and print publications will acknowledge ADAI and this grant.	$39,949.00
Alabama Department of Agriculture and Industries	$516,633.90	Promoting Child and Adult Nutrition Knowledge and Consumption of Pecans	The University of Alabama will examine the nutritional benefits of pecans grown in Alabama, design a nutrition education program to promote child and adult nutrition knowledge and consumption of pecans, and assess the effectiveness of this nutrition education program on consumers' acceptability toward pecan consumption. The health benefits of pecans have not been fully elucidated and thus warrant further in-depth research. More understanding of the nutritional benefits of pecans and promoting the knowledge about the nutritional value of pecans among children and adults is expected to increase both the health status of the public and the profitability of pecan farmers.	$39,755.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Alabama Department of Agriculture and Industries	$516,633.90	Protocol Development for the On-Farm Cultivation of Armillaria-Resistant 'MP-29' Rootstock	Researchers at Auburn University and the Alabama Cooperative Extension Service will increase availability of resources in an effort to reduce the spread of Armillaria root rot (ARR) in peach orchards by developing a protocol for the on-farm cultivation of ARR-resistant 'MP-29' rootstock derived from tissue culture. Trees grafted on 'MP-29' rootstock are in short supply as nursery operators are reluctant to produce this rootstock because of its slow growth and characteristic development pattern. Cultural practices normally used in field production to stimulate plant growth in other crops will be used to encourage faster growth of 'MP-29' rootstock. Field studies will be conducted and results disseminated at conferences, works, webinars, and blogs. Results will culminate in the development of a protocol available to growers as an e-curriculum on how to cultivate on-farm 'MP-29' rootstock derived from tissue culture.	$38,502.00
Alabama Department of Agriculture and Industries	$516,633.90	Reducing Temperatures in High Tunnels and Greenhouses	Auburn University and Alabama Extension will partner with Alabama Department of Agriculture and Industries to evaluate and demonstrate effective strategies to reduce summer temperatures in high tunnels and greenhouses. By improving the cooling efficiency of high tunnels and greenhouses, summer production will increase and a quicker return on investment will be realized. Crops will also be exposed to more stable temperatures throughout the year through the use of better designed structures and automation. The goal of this project is to increase production in naturally ventilated high tunnels and greenhouses by demonstrating effective methods for cooling during Alabama's extreme summer temperatures.	$40,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Alaska Division of Agriculture	$251,526.70	2021 Southeast Alaska Farmers Summit: A Forum for Specialty Crop Growers	The 2021 Southeast Alaska Farmer's Summit: a forum for specialty crop growers is a venue for farmers region-wide to gather together to share strategies and learn innovative methods and techniques about growing specialty crops from research projects done by former Alaska SCBGP grantees, industry professionals, government organizations and university researchers. Marja Smets & Daniel (Bo) Varsano of Farragut Farm LLC will work with an advisory committee made up of five regional farmers, a University of Alaska Extension Services agent and a USDA Natural Resource Conservation Service agent to organize and host a 3 day comprehensive summit that includes presentations, workshops, roundtable discussions and networking opportunities for established farmers, as well as growers just entering into the field. Summit participants will learn a variety of methods and strategies for sustainable & efficient specialty crop production systems, as well as safe and responsible postharvest/food handling techniques.	$22,900.00
Alaska Division of Agriculture	$251,526.70	Alaska Agriculture Export Market Expansion Project	The Alaska Division of Agriculture will partner with outreach organizations and producers to encourage companies who use Alaska Grown specialty crops in their products to expand their market reach and increase export opportunities to them by providing travel stipends to attend trade missions and export markets relating to their products. In Alaska, many of our expanding companies who show a concerted effort to purchase Alaskan specialty crops for their products voice hesitancy to expand their sales beyond Alaska and purchase more Alaskan specialty crops. Market growth in Alaska is limited to our small population. If companies could reach a larger audience and buying market, they indicate that they would increase production and in turn increase purchases of Alaskan Grown specialty crops. We aim to allow them access to market expo by providing travel stipend to showcase their products and expand markets.	$30,193.91

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Alaska Division of Agriculture	$251,526.70	Alaska Farmers Market Manager and Specialty Crop Vendor Training Toolkit	Cook Inlet keeper, on behalf of the Alaska Farmers Market Association, will provide farmers markets and specialty crop vendors with foundational organization materials and best practices, in order to build more robust, safe, and consistent markets for local foods sales. This will be accomplished through the creation and dissemination of an Alaska Farmers Market Manager and Specialty Crop Vendor Training Toolkit, based on proven methods and stated market needs. AFMA believes that Alaska Farmers Market Manager and Specialty Crop Vendor Training Toolkit will be invaluable for market organizers and vendors trying to encourage the growth and sustainability of farmers markets, from large and urban to small and rural, and increase economic opportunities for farmers. The creation of this Toolkit will lead to a formalized in-person or remote -delivery Certified Market Manager training program in the future.	$38,745.00
Alaska Division of Agriculture	$251,526.70	Alaska Specialty Crop Producers Harmonized GAP Cost Share Assistance and Group GAP Education	The Alaska Division of Agriculture (AK-DOA) will manage an Alaska Specialty Crop producer funding assistance opportunity for the costs associated with obtaining buyer- required food safety, third party process audits and certifications, specifically, Harmonized GAP and GAP+. AK-DOA will educate industry on an additional food safety auditing system, Group GAP, which is designed for small scale producers, and an alternate to third party process audits. Small scale Alaska Specialty Crop Producers would like to expand their market access, but there is minimal interest from this industry to obtain a HGAP audit, due to the expense of these audits. The auditing system, Group Gap, may be alternative for this industry, to access retail and wholesale markets, who cannot sustain the high costs of an HGAP audits. The AK-DOA and USDA AMS will provide opportunities to present information on GroupGap, through producer and industry conferences, webinars, etc.	$19,040.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Alaska Division of Agriculture	$251,526.70	Assessment of Damage Caused by Lygus Bugs in Alaska Peony Production	The University of Alaska Agriculture and Forestry Experiment Station will assist Alaska peony growers in making informed decisions regarding control of Lygus bugs. The damage caused by these insects will be evaluated and characterized by confining the bugs to plants and by sampling of natural populations. Recommendations resulting from this research will be disseminated to stakeholders through publications and growers' meetings. This project will assess Lygus bug populations using different sampling methods and determining loss of marketable flower buds due to Lygus damage in several peony fields. This data will allow us to determine what sampling protocol (sticky cards, sweep nets, or beating) will be the best predictor of subsequent crop losses.	$22,719.00
Alaska Division of Agriculture	$251,526.70	Chilkat Valley Orchard Project	Haines has a history of orchards and agriculture. With a warming climate, improved tree fruit varieties and rootstocks, and Alaska-region growing methods, there exists significant unmet potential for orchards and tree fruits to make a greater contribution both to the Chilkat Valley economy and to community food security. The broad purpose of the Chilkat Valley Orchard Project is to fulfill this unmet potential. To accomplish this, the Chilkat Valley Historical Society, Inc., in partnership with the American Bald Eagle Foundation, seek to accomplish the following general tasks: a. Expanding community orchard knowledge, skill and productivity through outreach and education programs, b. Identifying and assessing local property and selectively advising property owners, where significant new orchard production can strengthen Chilkat Valley tree fruit production, economic competitiveness, and food security, c. Organizing to support the long-term success of tree-fruit cultivation and establishing an experimental orchard, in collaboration with External Supporter, the University of Alaska-Fairbanks Cooperative Extension Service.	$26,986.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Alaska Division of Agriculture	$251,526.70	Potential Distribution Systems for Kenai Peninsula Farmers: An In-Depth Comparison of Various Models	Homer Soil & Water Conservation District will produce an in-depth guide for those interested in creating distribution services for food from Kenai Peninsula farms that compares various distribution models for coordinating deliveries from multiple small farms. The publication will outline logistical considerations in Alaska, and will feature successful and unsuccessful ventures tried elsewhere and lessons that they can teach, the positions of local farmers and restauranteurs on which models they'd be interested to work with and why, and will be outreached through presentations and a variety of print and online media. This project will aid in the development of distribution systems to help Kenai Peninsula farmers to better connect with larger buyers, like restaurants, and may prove relevant and beneficial to other specialty crop producers across Alaska.	$22,287.06
Alaska Division of Agriculture	$251,526.70	Root Washer Development and Workshop	Alaska Pacific University (APU) will build, trial, and share – through publicly available plans and a guided workshop – an affordable dependable mechanical barrel root washer, which we believe will increase root crop processing efficiency and quality for Alaskan farmers. APU will research available plans for a root washer and evaluate which would be most easily constructed by farmers with basic building skills from locally available materials. Research will focus on several plan concepts outlined online in videos, or blogs from Michigan State University, Versaland (an independent farm design company in Iowa), The Ecology Action Center, Orchard Hill Farm (WA), and more. Evaluation criteria will include ease of use, availability and affordability of materials (goal to build a washer for under $1000), and ease of construction by individuals with basic building skills and tools. APU will then build a prototype washer and trial the machine for one growing season, gathering data on efficiency, ease of use, and durability. After making any necessary improvements to the original design, APU will host a farmer workshop, teaching farmers how to build and use their own root washer. We plan to use grant funds to purchase parts for five root washers to be built at this workshop. We believe that this process will remove the barriers of time, expertise, and materials that many farmers face, and allow more farmers to use mechanical root washers on their farms to increase efficiency.	$15,072.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
American Samoa Department of Agriculture	$282,679.16	Improve the territory's food security position by increasing specialty crop production via affordable and accessible hydroponic systems	The American Samoa Government Department of Agriculture (ASG DOA) will strengthen the territory's food security position by promoting the growth of specialty crops (lettuce, spinach, chives, cucumbers, tomatoes, herbs, peppers, and others) by using simple, affordable, and accessible hydroponic systems.	$282,679.16
Arizona Department of Agriculture	$1,413,543.23	1. Arizona Specialty Crop Reference Guide Update 2021	The Arizona Department of Agriculture (AZDA) will update and reproduce approximately 30,000 copies of an educational reference guide for consumers which will include: (1) Where our fruits, vegetables and plants come from and the benefits reaped from buying Arizona grown produce and plants; (2) Directory of Farmers' Markets, U-Pick Farms, Vineyards and Lavender Farms throughout Arizona; (3) Directory of Arizona Wine Grape Growers; (4) Listing of Arizona Specialty Crop availability by season; and (5) Food safety information for fruits and vegetables (What's being done and what consumers can do)	$100,000.00
Arizona Department of Agriculture	$1,413,543.23	2. Continuation of GHP/GAP One-to-One Assistance	The Arizona Department of Agriculture's Agricultural Consultation and Training (ACT) division will offer and provide one-on-one assistance to fresh fruit and vegetable producers/growers, distributors, wholesalers and handlers so that they can become USDA GHP/GAP certified. This assistance program will provide benefits to those producers looking to address food safety concerns of their customers. These funds will be used for a GHP/GAP Coordinator to expand upon the education and outreach efforts of the current GHP/GAP Certification Training Program and to provide "one on one" assistance to training participants as needed to develop GHP/GAP procedures. ACT is taking GHP/GAP training to the next level by becoming involved with the Sun Produce Cooperative, which grew from the Maricopa County Arizona GROUP GAP Project. This project is to incorporate the small growers of Maricopa County into a collective food safety assessment and certification system permitting these growers and producers to expand their operations and markets. The growers realize that certification is crucial to their fulfillments. ACT will serve as food safety training lead and consultation for this GROUP to individual GHP/GAP plans, when required. One requirement of grower membership of the Co-op is to become GHP/GAP certified within one year of joining.	$52,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arizona Department of Agriculture	$1,413,543.23	3. Promoting The Online Arizona Certified Nursery Professional Program	The Arizona Nursery Association (ANA), will use these grant funds to promote the new, online educational offerings for Arizona Certified Nursery Professional training. By utilizing several promotional tools including social media, advertisements in industry trade magazines, personal visits to retail nurseries, and working with vocational agricultural teachers, we will increase knowledge of and enrollment in the new online program.	$19,010.00
Arizona Department of Agriculture	$1,413,543.23	4. UofA SWAG, A Hands-on Approach to Ag Literacy	This project would be delivered through the Southwest Ag for Kids (SWAG) program which is an agriculture literacy program operating through the UA Cooperative Extension in Yuma County school districts. The SWAG program was implemented in the spring of 2017 and reached 594 students and 24 teachers that first semester. The demand for the program has grown substantially and as of fall 2019, reached 2,712 students and 97 teachers during the fall semester. With this project, SWAG would deliver lessons on iceberg lettuce and dates targeting 5th thru 7th grade students. These lessons would cover the life cycle, nutritional value, food safety, and the importance of the crop to the local economy. The instruction would be delivered by utilizing breakout boxes as an instructional tool. Breakout boxes are an “escape room in a box” where the students unlock various locks to access what is inside the box. While solving the puzzles to gain access to the locks, the students are learning about iceberg lettuce and dates.	$12,420.00
Arizona Department of Agriculture	$1,413,543.23	5. Are We Over-Fertilizing Arizona Pecans with Nitrogen?	Nitrogen is applied to Arizona pecans in larger quantities than any other nutrient, however data that quantify the need for specific amounts of nitrogen fertilizer are lacking. The University of Arizona will expand a multi-year study, started with immature pecan trees in a commercial Arizona orchard, to evaluate response of nut-bearing pecan trees to applied nitrogen to quantify tree nitrogen demand. Results will be disseminated through presentations to pecan growers, and by providing revised University of Arizona fertilizer recommendations in a Cooperative Extension bulletin.	$7,164.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arizona Department of Agriculture	$1,413,543.23	6. Arizona Wine Grape Varietal Research and Evaluation Initiative (AWVR)	In conjunction with Arizona landowners and wine grape industry constituents, the University of Arizona and College of Agriculture, Life and Veterinary Sciences, and Cooperative Extension will bring together researchers and industry professionals in a two-day deliberation and forum to share expert knowledge and collaborate with the 3 American Viticulture Areas (AVA) among stakeholder communities, in order to develop investment to support a long-term plan in establishing a University of Arizona Wine Grape Varietal Research and Evaluation Station. The two-day forum will unite statewide wine industry constituents along with national and international experts in the planning and design of a viticulture research facility. Breakout sessions during this event will primarily be focused on the input and needs of the current wine grape industry producers and how this facility will generate support for their wine grape industry and economic return. The ultimate outcome of this collaboration is to generate a model or process, along with technology, for future support of developing the research facility and seeing it through fruition. This meeting will be held in person but will be delayed within the 1-year project period, and if needed, a no-cost extension would be requested to continue with the plan to hold an in-person meeting.	$15,609.00
Arizona Department of Agriculture	$1,413,543.23	7. Assessment of Decline and Contributing Diseases in Arizona Ash Trees	Arizona or velvet ash ('Modesto') is a common urban tree used in landscapes and parks across the state to provide shade and seasonal foliar color. A growing number of ash tree stands in Arizona Urban forestry exhibit a range of symptoms including witches' brooms, dieback, reduced growth, and tree mortality. Phytoplasmas, Verticillium wilt, cotton root rot, and abiotic stress may contribute to Arizona ash decline. The University of Arizona will mitigate ash decline (AD) by: 1) surveying ash trees to determine how prevalent AD is in Arizona and what factors are contributing to AD, 2) determining whether Phytoplasma is responsible for AD in Arizona, and 3) educating arborists and landscape professionals on the biology, epidemiology and management of AD. The project outcomes are numerous AD-affected ash trees that will get correct diagnosis and proper management. Saved ash trees will continue to provide shade and aesthetic beauty for Arizona citizens.	$38,969.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arizona Department of Agriculture	$1,413,543.23	8. BMPs to Reduce Crop Contamination from Furrow Irrigation	The University of Arizona Cooperative Extension will evaluate four (4) Best Management Practices (BMPs) available to growers to reduce bacterial transfer from contaminated furrow irrigation water to leafy greens. The research driven extension team will specifically focus on evaluating solutions for furrow irrigated romaine and leaf lettuce and will provide recommendations to industry after the completion of the two-year project.	$32,380.00
Arizona Department of Agriculture	$1,413,543.23	9. Controlling Fusarium Wilt in Lettuce Using Precision Applied Steam	The University of Arizona will develop and evaluate an innovative soil disinfestation technology, use of precision applied steam, for controlling soilborne pathogens that cause Fusarium wilt of lettuce. We will disseminate knowledge gained and demonstrate the technologies developed from this project to growers and lettuce industry personnel through field days, extension meetings, publications and websites.	$94,710.00
Arizona Department of Agriculture	$1,413,543.23	10. Determining the threat of Xylella Leaf Scorch in Arizona	An outbreak of leaf scorch disease emerged in several vinifera vineyards and pecan orchards in Cochise County. Very high prevalence of leaf scorch was reported, with a large number of stakeholders reaching out to University of Arizona Cooperative Extension Plant Pathologist and agent. The goal of this project is to determine what causes leaf scorch in grapevines and pecan trees as well as what factors are driving this outbreak, so that ecology-based disease management strategies can be devised and immediately implemented. Project outputs will be shared with growers, pest control advisors, University of Arizona Cooperative Extension advisors and the scientific community via on-farm workshops, field days, conference presentations, and online publications.	$64,889.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arizona Department of Agriculture	$1,413,543.23	11. Economic Impact and Resiliency of Arizona's Agricultural and Food Industries	This project will estimate the economic impact of the agricultural and food industries utilizing the both the 2019 and 2020 data from IMPLAN – the leading data and software supplier for this type of regional economic analysis. First, using 2019 data we will estimate the contribution of the overall agricultural and food industries to the state of Arizona's entire economy. Second, based on those estimates, we will then estimate the contribution of specialty crops within the overall agricultural and food industries. It is noted that this will establish the pre-novel coronavirus (COVID-19 hereafter) pandemic baseline of economic resiliency. Moreover, the provision of this economic impact information is crucial to stakeholders in Arizona and fills in the gap since the last such study was published using 2014 data. Third and lastly, given the COVID-19 pandemic's impact on the agricultural and food industries as well as the non-agricultural and non-food industries in 2020, we will estimate its impact.	$78,832.00
Arizona Department of Agriculture	$1,413,543.23	12. Evaluation of biological fungicides to manage late blight in celery	Dr. Bindu Poudel at University of Arizona, Yuma County Cooperative Extension will lead this project. Martin Porchas Sr. and Rebecca Ramirez will assist in coordinating the project. This project aims at establishing a biofungicide efficacy trial at University of Arizona. A large percentage of celery grown in Yuma area is organically grown, the growers struggle with finding right biologicals for disease management in organic celery. This project will evaluate the efficacy of different biological fungicides available in market for late blight of celery. Duda Farm Fresh Foods will be the cooperator in this project providing feedbacks and relevant information about celery production. The end goal of the project is to establish an efficacy trial that is conducted every year at University of Arizona. Once this trial is conducted for first year, data generated and public having access to the research plot on an organized field day, the program will be self-sustainable. Once first year data is generated and public shows enough interest, private sectors (biofungicide companies) will be paying for their products to be included in the trial in following years. Starting 2021, biofungicide efficacy trial in celery will be a regular component for Yuma Plant Pathology Program dedicated to providing scientifically relevant information to the agriculture community.	$40,969.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arizona Department of Agriculture	$1,413,543.23	13. Field Trials for Disease Management of Fusarium Wilt of Lettuce	To accomplish the objectives of this project, the Yuma Center of Excellence for Desert Agriculture (YCEDA), a public-private partnership between the University of Arizona and the desert agriculture industry, has partnered with Arizona lettuce industry producer-cooperators and the University of Arizona Cooperative Extension. Fusarium wilt of lettuce is severely impacting productivity and thus, the competitiveness of the Arizona lettuce industry. Since 2015, YCEDA has managed annual SCBGP projects evaluating commercial and precommercial lettuce cultivars for resistance to Fusarium wilt, chemical and biological crop protection products for disease suppressing activity, and cultural management methods via trials in commercial fields. A greater understanding of disease management has been gained from these trials and this project will continue collecting these important data over the next two years by increasing the number of lettuce breeding lines and cultivars evaluated for disease resistance including new commercial cultivars, continuing to evaluate promising crop protection products and evaluating cultural methods for reducing pathogen populations in soil and techniques for avoiding the disease. Objectives for this trial were developed based on feedback from Arizona lettuce industry members and from data gathered by a recent industry survey undertaken by YCEDA. Trials will be conducted each fall, and results will be widely disseminated each spring to the Arizona lettuce industry through reports, seminars, electronic media and field days to aid in disease management decisions.	$57,333.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arizona Department of Agriculture	$1,413,543.23	14. Guayule Insect Pest Management During Stand Establishment	The University of Arizona will work with agro-industry, guayule industry and their scientists, growers, and Pest Control Advisors to develop best practices for insect management at stand establishment of direct seeded guayule through experimental research. Of greatest concern is the damage caused by the palestriped flea beetle (Systena blanda). Insect pests are a critical threat to stand emergence and establishment, causing lost productivity and lost input efficiency (reduction in efficiency of weed controls, irrigation losses, etc.). Field studies will be performed in experimental plots and with commercial growers. We will work to develop efficient, effective, and economically viable methods to reduce, mitigate, or eliminate palestriped flea beetle pressure in guayule during stand establishment. We will identify effective chemistries to compliment or replace the only registered chemical control for flea beetles and determine the most effective timing of applications. We will develop cultural controls, such as companion planting, to compliment or replace the use of chemical controls. Additionally, we will pilot study methods for faunal surveys in commercial guayule fields that will help establish the safety and sustainability of pest control techniques developed for guayule. Project outcomes will be of great value to growers in the state and to industry who need stand integrity to economically produce guayule. Outcomes for stakeholders will include effective chemical controls and cultural controls that economically prevent insect damage during guayule stand establishment resulting in a healthy more uniform stand that is able to tolerate adverse conditions, ultimately avoiding lost productivity and costly additional inputs.	$57,333.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arizona Department of Agriculture	$1,413,543.23	15. Improving Transparency of Pesticide Registration Review for Specialty Crops	The University of Arizona will work with the Arizona Department of Agriculture (ADA) to maintain ongoing access to verified and improved pesticide use data, for the benefit of Arizona specialty crop industries. Data will be available to support research priorities of specialty crops, Extension education, and pesticide registration needs, including informing ongoing EPA registration reviews of the benefits of key chemistries for production of specialty crops. We will enhance the competitiveness of Arizona specialty crop industries by improving transparency of, and producer access to, EPA's registration review process. We will solicit feedback from our network of end-users to improve our communication processes and web-based tools, enhancing producer capacity to respond to pesticide registration issues that directly impact specialty crops industries. We will continue to work with end-users and Arizona Farm Bureau partners to develop and submit comments to EPA on behalf of specialty crop producers and convene our stakeholder advisory board via teleconference to inform ongoing priorities. Outcomes of this project for specialty crops stakeholders include increased transparency of the EPA registration review process, improved access to information and resources to influence pesticide registration review decisions, and ongoing industry access to accurate pesticide use data.	$55,138.00
Arizona Department of Agriculture	$1,413,543.23	16. Incorporating soil amendments to manage Fusarium wilt in Lettuce	The PI of the project, Dr. Bindu Poudel is a newly hired plant pathologist at University of Arizona-Yuma county cooperative extension. The PI has been working with local growers, and pest control advisors over the past year, understanding the local needs. The Yuma plant health clinic which is a component of the PIs program receives high volumes of samples infected with fusarium. Fusarium wilt is a huge problem in lettuce production and is very difficult to manage. Lack of resistant varieties, the inability of growers to do crop rotation that requires at least 4 years of rotation, and little understanding of soil health are some of the main hindrances in disease management. This project aims at using different soil amendments available in market to improve soil health as well as different cultural practice to manage the disease. The idea behind soil amendments is to add beneficial microbes in the soil that promote healthier soil, thus reducing the plant	$90,938.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			pathogens. The project will be conducted 2 years in a row on the same field to see the effect of amendments over the span of two years. Different plant species will be used as cover crop in summer to evaluate their effect. A susceptible variety "Raider" will be used in the study. Each season a field day will be held and opened for the public to look at the results.	
Arizona Department of Agriculture	$1,413,543.23	17. Methods to Control Palo Verde Broom	The University of Arizona will determine best practices for controlling blue palo verde (BPV) witches broom in nurseries through further refined molecular testing for the emaravirus causing the disease, and by investigating the relationship between time of infection and appearance of broom symptoms. The Arizona Nursery Association strongly supports this project. Many BPV landscape trees in Arizona are infected by an eriophyid mite-transmitted emaravirus causing witches broom, dieback, and eventual tree removal. Previously we identified an unknown emaravirus, blue paloverde virus (BPVV) associated with BPV trees exhibiting broom symptoms and found an association between BPV disease and the eriophyid paloverde mite, the suspected vector. Our objectives are: 1. Inoculate virus-free plants with BPVV and determine the time required between virus detection and broom symptom development. 2. Develop and optimize quantitative PCR to enable detection of the four viral RNAs to improve sensitivity of BPVV detection in mites and plants. 3. Offer BPVV testing to wholesale nurseries in Arizona, to determine presence or absence of BPVV in nursery stock. Virus testing will be done by RT-PCR and qPCR, methods developed and refined in the last two years, to detect BPVV in plants and mites. Defining the amount of time required for paloverde plants to become infected after mite-inoculation, detecting BPVV using a more sensitive method, and understanding the amount of time required for development of broom symptoms following inoculation (latency) will bring growers substantially closer to controlling the disease and make the production of virus-free BPV nursery trees a reality.	$99,758.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arizona Department of Agriculture	$1,413,543.23	18. Microbial Quality of Backflush Water from Irrigation Sand Media Filters	The University of Arizona will assess the microbial quality of water backflushed from drip irrigation sand filters. Most drip irrigation systems used for commercial-scale agriculture use filters to prevent the drip lines from clogging due to organic matter, turbidity or sediment, and suspended solids. Sand and disk filters, while effective at reducing downstream clogging of drip tape, require routine backflushing to remove the buildup of particulates that block the filters to keep them operating efficiently. Both indicator and pathogenic microorganisms are also concentrated during this process and can be present in the backflushed water. Common practice by industry requires the backflushed water to be discharged into a canal or ditch, which could result in microbial loading of the surface water and lead to increased risk to downstream users. In this study, backflush water will be collected and tested for generic E. coli, total coliform bacteria, and Salmonella. Samples will be collected three times during backflush operations – at the start, middle, and end of the operation. Samples collected during the growing season will be archived for 90 days prior to analysis for pathogens. In addition, the efficacy of several disinfectants will be evaluated against enteric bacteria present in backflush waters under varying conditions (e.g., temperature, turbidity, amount of total dissolved solids). The goal of this research is to assess the microbial quality of sand filter backflush water and develop recommendations for grower/irrigator Best Management Practices (BMPs) for their safe disposal and/or treatment that will be disseminated to the broader grower community.	$88,023.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arizona Department of Agriculture	$1,413,543.23	19. Quantitative and Temporal Assessment of Non-Desert Landscape Tree Shade	Enumeral Research and Consulting LLC received grant funds from the 2018 and 2019 SCBGP funding cycles which have allowed us to develop reliable manual and automated methodologies for accurately measuring the climate mitigation potential of shade from landscape trees. The 2018 grant employed handheld equipment and made short-duration measurements of temperature differential between shaded and unshaded soil surfaces. With the 2019 grant we were able to repeat the experiments using hand-held instruments on non-native landscape trees species, purchase climate micro-loggers to collect temperature data 24 hours a day for multiple days and to develop analytical tools that will handle the high volume of data collected on desert-adapted landscape trees. We now propose to use these micro-loggers and analytic software to examine populations of non-native landscape tree species. All equipment purchased in the previous two funding cycles will be used to complete the proposed study. With the limited number of "ground truth" studies in the Urban Forest/Urban Heat Island literature (and none with desert-adapted trees), it seemed prudent, empirically, to adopt this stepwise approach to our research. The proposed study would complete the full cycle of these experiments and should allow us to make data-based comparisons of the temperature mitigation characteristics between the two primary cohorts of the Arizona landscape tree palette.	$88,023.00
Arizona Department of Agriculture	$1,413,543.23	20. Reducing Impact of Lemon Brown Wood Rot	One of the greatest challenges for lemon growers in Arizona is the economically viable management of citrus brown wood rot (BWR). The causal fungal pathogen Fomitopsis meliae spreads from tree to tree and from orchard to orchard through airborne fungal spores and attacks trees by gaining entry through pruning wounds and other injuries. Thus, infected branch removal and wound protection are two key components behind effective disease management strategies. However, our knowledge of early symptom expression, seasonal abundance of spore inoculum and fungicide efficacy is limited, making manipulations exceedingly difficult. The expected outcomes of this project are to enhance the competitiveness of Arizona's $55.5 million citrus industry by: a) identifying new chemical tools for BWR management, b) informing growers of seasonal abundance of fungal	$33,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			spore inoculum, and c) educating growers on early BWR symptomology and epidemiology of BWR.	
Arizona Department of Agriculture	$1,413,543.23	21. The second population survey of Fusarium on lettuce in Arizona	The University of Arizona will characterize the genetic and pathogenic diversity of Fusarium oxysporum f.sp. lactucae (FOL), causal agent of Fusarium wilt of lettuce. The first characterization of FOL in Arizona was conducted by the Pryor Lab in 2005. At that time, 27 fields were known to be infested, and from these fields 20 strains of the pathogen were genetically characterized by genetic fingerprinting and by pathogenicity testing. Eight haplotypes were identified with no variation in pathogenicity. Since then, FOL has spread extensively across the lettuce production areas of the state. Importantly, increases in disease severity have been observed by lettuce producers and it is believed that pathogen diversity has substantially increased, creating challenges in building durable management strategies. The objectives of this work are to conduct a second survey of FOL in Arizona to characterize new genotypes that have become established, determine prevalence and distribution, and most importantly, test their pathogenicity in greenhouse-based lettuce variety trials. The work includes a comprehensive sampling of lettuce fields in the Yuma production area. FOL will be isolated from soil and plant tissue and DNA purified from each isolate. The DNA will be characterized by genetic fingerprinting and sequencing of known diagnostic genes. Importantly, greenhouse studies will establish differential pathogenicity of the recovered isolates by testing them against specific lettuce cultivars using new techniques developed by the Pryor lab. This will be the second FOL survey	$67,168.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			conducted in Arizona and will provide the most comprehensive characterization of pathogen populations in the state.	
Arizona Department of Agriculture	$1,413,543.23	22. Upgrading Yuma Plant Health Clinic to a Molecular Diagnostic Lab	Yuma Plant Health Clinic (https://extension.arizona.edu/yuma-plant-health-clinic) is operated by Yuma County Cooperative Extension – University of Arizona and supervised by Dr. Bindu Poudel. In 2019, the diagnostic samples received approximately 250 drop offs and analyzed over 700 plant samples. Yuma Plant Health Clinic (YPHC) has been providing the diagnostic service to the agriculture community free of charge. With the success of the clinic, we are looking at upgrading the diagnostic lab to a molecular diagnostic (DNA testing) laboratory. Growers as of now have been sending samples to labs outside the state, paying high fees. This project aims at providing molecular diagnostic service to the community at affordable price. Robert Emmitt, from Agdia Inc. has volunteered as a cooperator in this project providing information on reagents, equipment, pricing etc. Vegetable growing season in Yuma, Arizona starts in September and molecular diagnostic service will be available at YPHC starting September 2020.	$23,674.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			The service will include specific test for plant pathogens, including but not limited Polymerase Chain Reaction, ELISA/Immunostrips, Isothermal amplification etc.	
Arizona Department of Agriculture	$1,413,543.23	23. Water and Salt Management for Celery	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 measure water applied, evapotranspiration, and soil salinity levels in order to generate data that can be used to create management tools for most desert cropping systems. Ongoing research under this initiative has focused on lettuce, spinach, melons, watermelons, and brassica. However, celery is becoming a crop of growing importance in Yuma for which we currently do not have data or a commodity funding partner. The objectives of this project are to measure evapotranspiration from celery across different production scenarios; measure water application efficiency and distribution uniformity; and determine soil moisture and salt distribution during the cropping season.	$85,350.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arkansas Agriculture Department	$360,789.54	Establishing the Arkansas Quality Wine Program to Support and Expand the Arkansas Grape and Wine Industry	The University of Arkansas (UA) System Division of Agriculture offers a unique approach to address challenges that face the Arkansas grape and wine industry in terms of variability in wine quality and lack of consumer awareness of Arkansas wines. The UA System aims to increase quality of Arkansas commercial wines in partnership with grape and wine industry personnel and other organizations. Although not currently recognized as a major wine-producing region, Arkansas has a significant economic impact but faces challenges with inconsistent wine quality and lack of consumer knowledge about commercial Arkansas-made wines. Establishing quality and sensory standards for commercial wines can motivate winemakers and increase consumer awareness of the Arkansas grape and wine industry.	$72,115.00
Arkansas Agriculture Department	$360,789.54	Growing Arkansas' Institutional Procurement of Locally Produced Specialty Crops	The Access to Healthy Foods Research Group (ATHFRG) at Arkansas Children's Research Institute proposes to expand availability and access to specialty crops by conducting formative research, evaluation, and findings dissemination to support "farm to institution" - integration of locally procured products into institutional food environments - in Arkansas. Building on its FY19 Specialty Crop Block Grant, this proposal seeks to take findings from stakeholder interviews and the first annual report of the Local Food, Farms, and Jobs Act to create and disseminate training and technical assistance materials for growers and wholesale and institutional buyers.	$94,254.00
Arkansas Agriculture Department	$360,789.54	Harvest of the Season - Featuring Arkansas Specialty Crops and Supporting Farmers Growth in New Markets	Arkansas invested $1,255,960 in local foods, with the average school district spending 2% of their budget on local products based on the USDA Farm to School Census of 2015. Similarly, as reported in the Local Food, Farms, and Jobs Act Report of 2019, agencies, entities, and institutions spent $27,842,172.42 total, around 15% of their total budget on locally grown, and packaged and processed products within the state of Arkansas. The purpose of this project is to build and strengthen connections between specialty crop farmers and Arkansas institutions, increasing procurement opportunities at schools, and other wholesale markets by capitalizing on the promotional strength of Arkansas Farm to School, Arkansas Grown, Arkansas Made, and Homegrown by Heroes.	$91,530.80

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Arkansas Agriculture Department	$360,789.54	Practices to Increase the Efficiency and Sustainability of Blackberry Production in Arkansas	The University of Arkansas Division of Agriculture Cooperative Extension Service will partner with blackberry growers to develop research-based recommendations for new training methods and cane management practices for blackberry production in the state. The project will evaluate ways to reduce labor costs through alternative training methods for moveable trellises and through evaluation of a plant growth regulator. The project will also evaluate how these practices impact pest management and fruit quality in order to increase the competitiveness of this specialty crop in Arkansas. Workshops and virtual tours of the research will be conducted in conjunction with the Arkansas Blackberry Growers Association.	$75,000.00
California Department of Food and Agriculture	$23,844,114.26	1. Cascade Farm and Ranch Regenerator	The project will incubate new regenerative specialty crop farms by providing access to affordable land, implements, mentoring, markets, economic skill development, financing, and connections to land tenure opportunities for beginning and socially disadvantaged farmers. A new generation of skilled farmers is needed in California to continue feeding the nation, but access to affordable land is one of their biggest challenges. This project will help diverse new farmers launch strong businesses. By 2022, the project will incubate eight new land-based specialty crop production businesses. The project will prioritize supporting women and farmers of color. Results will be evaluated by counting the number of beginning farmers in the program who go into specialty crop production, and the number of farmers in the program who are from socially disadvantaged backgrounds.	$97,360.00
California Department of Food and Agriculture	$23,844,114.26	2. A Sweeter Future: Honey, Education, Entrepreneurship	Responsible science-based apiary management is desperately needed in today's beekeeping enterprises. The project provides high school students with a holistic hands-on educational opportunity, focusing on the development of young professional beekeepers by teaching both technical and entrepreneurship skills. Students will learn the business of managing an apiary along with the procedures for collecting, extracting, and packaging of honey and flowers. The project will empower beginning and socially disadvantaged student farmers by providing the knowledge and skills necessary to have impactful careers in the specialty crop industry. Success will be measured by the total	$99,974.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			number of students that will pursue a career in the specialty crop industry.	
California Department of Food and Agriculture	$23,844,114.26	3. Training Juveniles and Foster Youth Between the Ages of Sixteen and Twenty-Five to Produce and Grow Specialty Crops	For more than five years, Aisha Academy (AA) has been providing comprehensive health, education and human support services to Los Angeles County foster and homeless transitional-age-youth (ages 16 to 25). There are approximately 80,000 foster children in California with over 5,000 aging out of the system every year. Studies show that nearly two-thirds of the transitioning foster youth in California face imminent homelessness while older youth and young adults remain among Los Angeles County's most under-served populations, facing multiple barriers to becoming self-sufficient and productive adults. AA has identified gaps in the vocational training landscape and determined that there is a lack of workers to drive tractors for farmers. AA will train juveniles and foster youth between the ages of 16 and 25 who have aged out of the system. The training will provide job readiness skills, certification in tractor driving and a guaranteed job through strategic partnerships with organizations such as the California Association of Wine Grape Growers and Sam Cobb Farms.	$100,485.00
California Department of Food and Agriculture	$23,844,114.26	4. We Love California Grownifornians	The project will implement a multi-platform digital campaign and retail promotions to create strong support from the retail trade and increase consumer demand for California specialty crops and specialty crop products. The multiplatform digital campaign will utilize contextually relevant media placements, deliver rich and engaging experiences within impactful media, integrate multiple influencer marketing programs, and utilize social media to reach consumers in shareable environments. Key performance indicators that will measure success of the multi-platform digital media campaign are quality and viewable impressions, content engagements, and content views.	$2,000,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	$23,844,114.26	5. Growing Domestic California Prune Sales by Increasing Demand for Prune Ingredients in Food Products	Sales of California prunes in global markets have steadily declined each year since the 2015/2016 market year, dropping 19 percent since then. With exports equaling approximately 50 percent of California prune sales, California prune growers need to build new high-value customers for their crop to maintain viability. In addition to other functional benefits, California prunes are a natural, low-sugar substitute and with 77 percent of United States consumers seeking to limit/avoid sugar (International Food Information Council), prunes are an ideal ingredient to meet this need. As such, Sunsweet Growers (SSG) seeks to promote California prune ingredients as a sugar substitute/functional ingredient to food companies, specifically for use in baked goods and bars.	$450,000.00
California Department of Food and Agriculture	$23,844,114.26	6. Acquiring California Dried Fruit in Schools and on the USDA's Federal Commodity Entitlement List	To meet the demands of strict school district guidelines as well as the picky palates of school-aged children, the California Dried Fruit Coalition (CDFC), a coalition of California's date, dried fig, prunes and raisin farmers, created a new product through qualitative and quantitative research, prototype testing in schools with kids and staff, and key decision maker engagement. To continue the strong momentum and enthusiasm for the new product, the CDFC is requesting additional Specialty Crop Block Grant Program funding to pilot the product in schools and ultimately secure California Dried Fruit on the USDA Federal Commodity Entitlement list.	$450,000.00
California Department of Food and Agriculture	$23,844,114.26	7. Updating Perceptions: Connecting California Wine to a Well-Balanced Lifestyle	In 2018, the growth rate of retail wine sales in the United States declined for the first time in more than 25 years and experts also predict ongoing declines in the restaurant channel. Declines are attributed, in part, to consumers shifting from wine to hard seltzers, "light" cocktails, and other alternatives perceived to better align with a well-balanced lifestyle. Declining demand deeply impacts the 5,900 growers and 3,900 wineries who produce California winegrapes and wine, and who need a strong domestic home for their crop and wine for viability. To combat declines, Wine Institute will leverage their 85-years of experience marketing California wine to launch a marketing and public relations campaign establishing California wine as complementary to the well-balanced "California lifestyle" and synonymous with being outdoors and active; enjoying produce-driven cuisine; and valuing sustainability.	$448,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	$23,844,114.26	8. Consumer Direct to Dry Creek Valley: Increasing Demand for California's Signature Grape, Zinfandel	Restaurant visitation is at a 28-year low, with 80 percent of meals now being prepared at home. This is a significant increase from a decade earlier and will continue to increase over the next five years. For high-end wine drinkers, 77 percent indicate that trial in a restaurant would have a strong influence on choosing a winery to visit. This trend poses a threat to Dry Creek Valley's wineries, and its signature wine grape, Zinfandel, 75 percent of which is sold directly to consumers through winery visitation. This project boosts awareness and trial by contracting with chefs and influencers in three direct flight markets (Denver, Seattle, Phoenix) to create food and wine pairings that consumers can cook at home, sample via in-market events, and encourage visitation to the region.	$427,059.00
California Department of Food and Agriculture	$23,844,114.26	9. Substantiating and Communicating "The California Grown Fig Nutrition Story"	Figs have a historical and modern-day reputation for their many health benefits. From multiple references in the Bible to Firmenich, a leading global flavor company, naming fig the 2018 flavor of the year, figs stand the test of time. But there is no time like now to solidify and communicate "The California Grown Fig Nutrition Story" to differentiate California Figs from foreign imports. While the California Fig industry produces 100 percent of figs sold commercially in the United States, imports represent 60 percent of figs sold in the United States. The California Fig industry has seen a staggering 57 percent increase in fig imports (2017 versus 2016), a 361 percent increase from Spain and export trade uncertainties, further threatening the economic viability of the California Fig industry.	$449,020.00
California Department of Food and Agriculture	$23,844,114.26	10. Boosting California Processing Tomato Sales by Sharing Nutritional Value, Farmers' Stories, and Recipes with Consumers	California grows 98 percent of the processing tomatoes in the United States, a tomato variety used in sauces, ketchup, and paste. Since 2014, crop prices have declined by approximately 20 percent, in part from low vegetable consumption with only 9.3 percent of adults eating the daily vegetable recommendations. California's tomato growers need to build consumption and demand for viability. Opportunity exists with millennial consumers because they spend a higher percentage on vegetables than Generation X and baby boomers, and 46 percent of millennial primary shoppers have young families for which to buy and cook.	$450,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	$23,844,114.26	11. The Grow Native Campaign: Supporting California's Original Specialty Crop	Water districts and cities are incentivizing homeowners to transition from lawns to water-wise native plants. However, a 2017 State of the Industry Report conducted by Garden Center found specialty categories like native plants comprising only three percent of sales. Nursery professionals have helped the California Native Plant Society (CNPS) clarify the problem: consumers do not know what plants to choose, where to buy native plants, and how to care for them. To address this, CNPS's goal is to work with nearly 90 already-identified California nurseries and growers to increase their sales of 10 native specialty crops by 20 percent. CNPS will achieve this through an integrated marketing campaign featuring point of sale materials, how-to micro-videos, and social media.	$442,690.00
California Department of Food and Agriculture	$23,844,114.26	12. Foodwise Kids and Families: Increasing California Specialty Crop Consumption Through Cooking, Nutrition Education, and Market Tours	This project will increase access to and consumption of California specialty crops for approximately 11,500 children and families by providing nutritional education and increasing familiarity of specialty crops through market field trips and cooking classes. Public school students will meet and learn from California specialty crop growers at farmer markets, resulting in 1) personal connections to growers and familiarity with markets, for ongoing direct California specialty crop sales; and 2) experience preparing and preserving California specialty crops. After field trips, students will deepen their knowledge and skills during classroom cooking lessons. Then students and family members will learn to cook and enjoy California specialty crops together in a family cooking night. Pre- and post- program surveys will measure changes in awareness, knowledge, and consumption of California specialty crops.	$390,870.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	$23,844,114.26	13. From the Ground Up: Building Youth Leadership Through Specialty Crop Urban Agriculture and Nutrition Education	From the Ground Up (FGU) is an internship and apprenticeship program that engages teens from South Central Los Angeles to increase access to and consumption of specialty crops. By working on Community Services Unlimited urban farms, youth will learn to grow specialty crops, their health benefits, and how to prepare tasty, culturally appropriate, healthy dishes using seasonal specialty crops through hands-on nutrition education. Youth will deepen their knowledge by delivering hands-on gardening workshops and nutrition education, including cooking demonstrations, to the broader community. Youth will develop and implement educational presentations that increase consumption of specialty crops, and support for the specialty crop industry, among residents of an urban community that has limited access to fresh produce.	$232,875.00
California Department of Food and Agriculture	$23,844,114.26	14. Expanding Farmer to Consumer Relationships at Faith Community Sites in the San Francisco Bay Area	This project will increase consumption and sales of specialty crops by promoting direct marketing relationships between producers and faith-based institutions. Project objectives include, 1) develop 40 marketing outlets including farm stands, and community supported agriculture at faith sites; 2) provide nutrition education to 600 individuals at market outlets and 20 farm tours; and 3) facilitate farmers using assets owned by faith groups including land for at least 12 farms and gardens, and eight commercial kitchens for processing. The project builds on seven years of experience in Sonoma, Marin, Alameda, and Contra Costa counties with new partnerships with social service providers in underserved communities. The project will offer workshops in those four counties and provide technical assistance to partners in nine counties.	$331,105.00
California Department of Food and Agriculture	$23,844,114.26	15. Expanding Opportunities in Hospital Food Service for Small and Mid-Scale California Specialty Crop Growers	This project addresses barriers and enhances pathways for specialty crops to move from regional farms into the University of California, Davis Medical Center (UCDMC), a large-scale institutional kitchen and flagship for local purchasing within the Capital region. The project will, 1) increase purchase of fresh California specialty crops by 20 percent, including shifting from out of state or United States; 2) pilot a communication process for sharing UCDMC purchasing projections with regional producers, minimizing market uncertainty/risk for farmers by forecasting sales; 3) provide technical assistance for 75 growers and	$449,496.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			five food hubs to sell to institutional buyers; 4) develop skills for 227 cooks, dieticians, and managers; and 5) educate patients/cafeteria customers with 500 recipe cards.	
California Department of Food and Agriculture	$23,844,114.26	16. Increasing Access to and Consumption of California Grown Specialty Crops in the California Corrections System	This project will increase demand for California grown specialty crops by working to establish systems to increase procurement of California grown fruits, vegetables, and nuts in California Department of Corrections and Rehabilitation (CDCR) facilities. The project will: 1) educate CDCR stakeholders about the benefits of procuring and serving more California grown specialty crops; 2) work with stakeholders to develop policy and systems-level changes to promote procurement of California grown specialty crops; and 3) work with formerly incarcerated individuals to understand opportunities and barriers to increase consumption of California grown specialty crops in CDCR facilities and to provide them with nutrition education. The project broadly will reach 120,000 incarcerated people.	$439,345.00
California Department of Food and Agriculture	$23,844,114.26	17. Making Global Solutions Local: Increasing Awareness and Consumption of Nutrient-Dense Moringa for All Californians	Increasing consumption and production of climate-sensitive nutrient-dense specialty crops in California is imperative. Moringa oleifera (moringa) is an ideal crop in speed with California's mission to have a healthier environment, healthier people, and prosperous farmers. While utilization of moringa at a global level is rapidly increasing, there is a vast knowledge gap in California and unmet potential for local market growth. Through presentations and intensive trainings, the project will sequentially increase awareness, knowledge, availability, and access of moringa to over 25,000 California residents, with a focus on underserved communities. Impact assessment of knowledge gained, taste preferences, adoption of cultivation, and consumption of moringa will be measured by quantitative and qualitative means.	$446,341.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	$23,844,114.26	18. Building the Capacity of Growers and School Food Buyers to Increase Specialty Crop Sales	Community Alliance with Family Farmers facilitated $3.5 million in local institutional specialty crop sales in two years. Fifty four percent of California school districts intend to increase local purchasing, yet many challenges exist, including underutilized resources and confusing bid requirements. The project will increase local specialty crop sales in schools by providing interactive guidance paired with hands on technical assistance that builds buyer's capacity and producer's response. Transforming existing, static procurement guides into interactive, user-friendly decision and implementation support tools will help 15 school districts, serving over 140,000 students, meet local procurement goals while increasing institutional sales accounts for more specialty crop farmers. Success measurements are increased local specialty crop use at 15 participating school districts, local preference bid awards, increased specialty crop sales for more farmers, individuals reached, and interactive resource use.	$367,282.00
California Department of Food and Agriculture	$23,844,114.26	19. Growing Together: Building Sustainable School Gardens in Los Angeles	"Growing Together: Building Sustainable School Gardens in Los Angeles" will promote California specialty crop consumption among Los Angeles (LA) County school students by partnering with LA County's well-established Master Gardener Program to support and sustain school gardens at high-need schools. School gardens introduce students to nutritious specialty crops and influence lifelong eating habits, yet most garden programs in LA County are under resourced. The project will train Master Gardeners on the unique needs of school gardens and place them at high-need schools for their required volunteer service hours, providing support to schools to sustain and grow garden programs. The project will also establish a curriculum, program model, and community partnerships that will endure beyond the grant period.	$277,950.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	$23,844,114.26	20. From Harvest of the Month to Harvest of the Moment: Increasing Local Specialty Crops in Humboldt County Schools	The Humboldt County Office of Education (HCOE) has piloted several strategies to help farmers and school districts overcome the challenges of Farm to School procurement in rural Humboldt County. One strategy shows the most potential: when procuring a local produce item for the Harvest of the Month (HOTM) education program, HCOE has added onto the order on behalf of school cafeterias when the farmer has enough of the item to meet demand. The farmer delivers produce to HCOE which is then distributed to the schools at no charge. This project will expand this aggregation/distribution model beyond featured HOTM items, providing a critical market outlet for local produce farmers and increasing access to healthy specialty crops in schools.	$207,155.00
California Department of Food and Agriculture	$23,844,114.26	21. Specialty Crop Nutrition Education and Promotion Program (SCNEPP)	Led by our 18-year-old nutrition education team, Sustainable Economic Enterprises of Los Angeles (SEELA) integrates specialty crop promotion and marketing strategies across SEE-LA's six farmers' markets that feature 86 specialty crop producers serving 13,000 Angelenos weekly. The program will provide 36 bilingual adult nutrition education classes, developed by a registered dietitian featuring culturally appropriate recipe demonstrations, 12 summer kids' culinary classes with hands-on learning in produce preparation, and 24 seasonal specialty crop marketing events annually with interactive learning, taste tests, and market-wide promotion of specialty crop producers. Classes will be prioritized in SEE-LA's four farmers' markets in underserved communities.	$450,000.00
California Department of Food and Agriculture	$23,844,114.26	23. California's County Bounty: An Agricultural Tour of California's Specialty Crops by County	"California's County Bounty" addresses the need to educate consumers about the many benefits of consuming California specialty crops. The project will highlight the top commodities grown within each of California's 58 counties as well as the diversity of specialty crops in California. This will be framed within a 7,000-9,000 square foot interactive exhibit at the annual California State Fair. The exhibit will provide experiential learning to visitors by way of demonstrations, samples, interactive activities, educational signage, farmer/producer talks and more. Additionally, the project will create a Specialty Crop Workshop Series that will take place in the "California Classroom" at the State Fair.	$395,212.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	$23,844,114.26	24. Increasing Specialty Crop Access and Education in Underserved Communities and Schools	This project will expand demand for specialty crop fruits and vegetables while improving the health of underserved Central Coast communities through Food Bank nutrition education and expansion of specialty crop offerings at area school districts. Food Bank nutrition education will reach 2,600 children and 2,200 adults. School district purchasing will impact 4,000 additional children. The project will increase Food Bank clients' familiarity with specialty crops and local Farmers' Markets, after-school programs, preschools, and via cooking classes. Also, Slow Money San Luis Obispo will engage at least three school districts in expanding specialty crop purchases from at least six new California farmers, supporting purchases with farmer visits and tastings to increase the number of students consuming California specialty crops.	$449,317.00
California Department of Food and Agriculture	$23,844,114.26	25. Make Mine California: Improving Specialty Crop Access and Education in Schools	The one billion school meals served each year in California represent one billion opportunities to create lifelong consumers of California specialty crops by providing students with fresh, delicious fruits and vegetables, and education that increase their awareness of healthy specialty crops. Yet, most food service directors lack accessible information about available specialty crops grown in California, the tools to procure them, and resources to meaningfully engage students. The Make Mine California project will encourage public school districts to procure specialty crops by providing Make Mine California specialty crop lists from distributors and proven strategies to engage youth through farm to school events and farmer visits.	$335,738.00
California Department of Food and Agriculture	$23,844,114.26	26. Specialty Crop Workforce Ready Academy	California's specialty crop growers are in critical need of a skilled workforce. Skilled labor shortages are meaningfully impacting the economy. Nationally, this gap cost over $3 billion in gross domestic product growth in 2012 alone. The Specialty Crop Workforce Ready Academy (Academy) is designed to tackle this issue by training a new crop of individuals able to meet the needs of nut growers in Stanislaus County. AgSafe, with the Stanislaus County Office of Education (SCOE) and VOLT Institute will align education with the industry to create a four-part training program for Come Back Kids. The students are 18 and older, left the educational system and returned for their General Education Development and specific workforce skills to enhance their ability to secure local jobs.	$93,856.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	$23,844,114.26	27. Food Safety Modernization Act and Related Training for the California Central Valley Specialty Crop Industry	This project will enable the specialty crop industry to enhance its competitiveness by ensuring compliance to the Food Safety Modernization Act (FSMA). It will support California's Central Valley specialty crop industry with the adoption of FSMA requirements by providing local and affordable food safety trainings. The local specialty crop industry has difficulty attending convenient and affordable food safety training as these trainings are offered in larger cities and require out of town travel that is costly and disruptive to business operations. College of the Sequoias has experience delivering local, convenient, and affordable FSMA and related food safety trainings. The project's aim is to reach the local specialty crop industry and their workforce on farms, packing houses, and food processing plants.	$2,016,809.00
California Department of Food and Agriculture	$23,844,114.26	28. Providing Produce Safety Rule Training to Help Growers Comply with The Food Safety Modernization Act	California experienced 2,672 foodborne illness outbreaks from 1998-2017 which caused 59,075 illnesses, 4,156 hospitalizations and 138 deaths; 46 percent of foodborne illnesses are traced to produce. Education can prevent illness; as such the Food Safety Modernization Act and the Produce Safety Rule require many California specialty crop growers to be trained/Produce Safety Alliance certified to ensure food safety. Sixty-five percent of California farms required to comply have not done so, mainly due to high compliance costs. Low-cost training is urgently needed as the lack of complying farms impacts the competitiveness of entire industry. Through a proven partnership, Farm Employers Labor Service, CA Farm Bureau, and Safe Food Alliance seek to provide 31 low-cost trainings, bringing more California farms into compliance, a high industry priority.	$408,679.00
California Department of Food and Agriculture	$23,844,114.26	29. Building and Retaining Current and Next Generation Workforce for Napa Winegrape Industry	California's agriculture labor shortage is severe. A 2017 California Farm Bureau survey found 69 percent of agriculture employers with seasonal labor saw shortages and states problem is more acute for grape growers. Napa's 1,338 winegrape growers, employing 9,857, are deeply impacted. To combat the economic/environmental impacts of this labor crisis on Napa farms, a larger regional skilled labor force must be both attracted and retained. Napa Valley Farmworker Foundation seeks to leverage its strong training reputation/experience to both introduce new workers to industry and retain the existing workforce by 1) executing a mentorship program to recruit new young people to	$447,141.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			industry; and 2) executing workshops, conferences, and English literacy courses to train/expand technical skills of current workforce (operators/farmworkers).	
California Department of Food and Agriculture	$23,844,114.26	30. Development of Efficient Drying Methods for Off-Ground Harvested Almonds	California produces about 1.2 million tons of almonds annually with an economic output of over $5.6 billion. The current harvesting method of almonds is associated with the two main problems of dust generation and microbial contamination from soil. Recently, the Almond Board of California (ABC) and the almond industry have determined to address these problems by developing alternate harvesting technologies to reduce dust generation and the risk of microbial contamination. The off-ground/shakecatch harvesting method is considered the most promising method to mitigate dust generation and almond contamination. However, the almonds harvested with the new method need to be dried with heated air to handle the large volume of the product for ensured quality and safety.	$447,884.00
California Department of Food and Agriculture	$23,844,114.26	31. Development of a Low-Cost and Accessible Evapotranspiration Toolkit for Irrigation Management of Almonds and Other Woody Tree Crops	Better water management tools are needed to ensure sustainable irrigated agricultural production in California. Grower-friendly tools emerging from remote sensing show great promise to fill this need. One such tool, the newly developed OpenET platform, will provide low-cost, accessible, and spatially distributed data at sub-field resolutions based on an ensemble of crop evapotranspiration (ET) models. OpenET will be operational in December 2020, but rigorous validation of its almond ET estimates has yet to occur. This project will provide validation by building on the success of the Grape Remote sensing Atmospheric Profile and Evapotranspiration Experiment (GRAPEX), led by Co-Principal Investigator Kustas, whom successfully tested an ET model based on satellite thermal imagery and accurately quantifies daily ET for commercial vineyards at 30m resolution.	$448,105.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	$23,844,114.26	32. Toward a Circular Economy: From Agricultural Waste to Sustainable Citrus Production Through Microbe-Mediated Processes	California's 1.4 million acres of almond crop produces 650,000 tons of low value almond shells. This project aims to demonstrate the use of two almond waste by-products, biochar (BC) and pyroligneous acid (PA), to sequester soil carbon, reduce agrochemical use, and enhance the beneficial native citrus microbiome which play a crucial role in plant growth, health, and stress resilience. BC will be amended to soil mixes and PA delivered through irrigation systems under greenhouse and field conditions. The costs and benefits of BC and PA will be estimated throughout its use to determine economic feasibility.	$446,401.00
California Department of Food and Agriculture	$23,844,114.26	33. Development of Natural Antimicrobial Agents from Byproducts of Olives	The pre- and post-harvest, fruit and vegetable processing industries are in need of new, natural, and environmentally sustainable antimicrobials to reduce the use of conventional chemical preservatives. This is an opportunity for the California olive oil industry since the large number of byproducts generated from the processing of olive oil are considered "waste" while, in fact, they contain phenolic compounds that have a high potential as antimicrobials. This project aims to develop natural antimicrobial treatments (sprays, dips, and/or coatings) made from olive byproducts to increase the value of the crop and the overall sustainability of the food ecosystem. The success of the project will be evaluated based on the success in discovery of antibacterial compounds from the olive byproducts, illustration of synergistic enhancement of antimicrobial activity with mild processing technologies, and adoption of the new antimicrobial technologies by industry.	$446,515.00
California Department of Food and Agriculture	$23,844,114.26	34. Optimizing Irrigation Innovation, Salinity Management, and Soil Health in California Processing Tomato Systems	California processing tomatoes grow on 240,000 acres of soil, drink 640,000 acre-feet of water, and generate $900 million. Though 80 percent of farms converted to subsurface drip irrigation, the Sustainable Groundwater Management Act incentivizes further efforts such as deficit or precision irrigation. However, conservation irrigation practices may exacerbate salinity or deteriorate soil health by perturbing microbial communities and biogeochemistry. This collaborative project will, 1) advance deficit irrigation guidelines for optimizing water, yield, flavor, nutrition, salinity, and soil health in processing tomato; 2) provide mapping and cost-benefit tools for incorporating deficit and precision irrigation into subsurface drip	$395,348.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			operations; and 3) quantify tradeoffs between conservation irrigation practices, salinity, and soil health for climate-smart decision support.	
California Department of Food and Agriculture	$23,844,114.26	35. Exploring Genetic Control of Plant Metabolome for Developing Drought Resilient Lettuce Cultivars	Lettuce is produced under high irrigation requirements and is very sensitive to drought conditions. It is reported that drought conditions lead to metabolic reprogramming of plants resulting in the accumulation of antioxidant compounds, amino-acids, carbohydrates, alcohols and proline, which together have an osmo-protective role. This project will perform comprehensive metabolome studies on drought sensitive and tolerant genotypes to identify key metabolites accumulated in the plants due to water-stress. Genomic loci controlling the concentration of metabolites will be identified using an interspecific recombinant mapping population.	$375,047.00
California Department of Food and Agriculture	$23,844,114.26	36. Converting Almond and Walnut Hulls into Food and Health Products	This project aims to create high value food and health products from almond and walnut hulls to increase the economic value and ensure sustainable management of these byproducts. The project objectives are to extract sugars, phenolic compounds, and other nutrients from the hulls; convert the extracts into food and nutraceutical products; and evaluate the nutritional and health benefits and the economic values of these products. Building on a previous project that was funded by the Almond Board of California, processes for extraction and hydrolysis of the hulls to liberate antioxidants and sugars will be optimized and scaled up.	$338,853.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	$23,844,114.26	37. Nutrient Management with Cover Crops: Effectiveness of Recently Selected Fava Bean Lines as Mix Components	Fava bean is a component of most cover crop mixes because of its substantial biological nitrogen fixation (BNF) potential. As part of a 2018 Specialty Crop Block Grant Program (SCBGP) award, the U.S. Department of Agriculture fava bean germplasm was screened for BNF, seed size, biomass, height, harvest index, and resistance to lodging, black aphid, and chocolate spot disease. This project will grow the selected accessions with common California cover crop mixes at California locations that vary in rainfall and soil type. The research will, 1) identify the BNF and nitrogen benefits of the new fava bean genotypes compared to current varieties and to other legume cover crops, 2) identify small-seeded fava bean genotypes that perform well in mixes with other species to reduce the seeding cost of cover cropping, 3) address the interaction of the new fava bean genotypes, which vary in height and biomass, with other species, and 4) fill the knowledge gap about plant traits that contribute to cover crop benefits.	$427,414.00
California Department of Food and Agriculture	$23,844,114.26	38. Root Knot Nematode Control Using Encapsulated Plant Extracts	The overall goals of this project are, 1) to develop formulations of diverse-class, biochemical pesticides including isothiocyanates, alkaloids, and terpenoids with improved stability, efficacy, and reduced phytotoxicity, and 2) to apply them to control root knot nematodes in soil and demonstrate their efficacy in field trials for strawberries, tomatoes and carrots. The success of this project will address the unmet needs of developing control nematode pathogens in organic and conventional agriculture and providing alternatives to chemical fumigation and pesticides. Biochemical pesticides derived from plants are sustainable but are not commonly used due their limited stability, half-life, and in some case phytotoxicity. In summary, by developing sustainable bio-pesticides for controlling root-knot nematodes, this project aims to aid in developing alternatives to fumigation of soil.	$449,547.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	$23,844,114.26	39. High-Throughput Screening of Walnut and Pistachio Rootstocks for Resilience to Water Deficit	The Sustainable Groundwater Management Act (SGMA), combined with interannual variability in California's snowpack and the resulting supply of surface water, will inevitably lead to years of water deficit for California tree crops. Walnut and pistachio are among California's most valuable tree crops and their orchards mature slowly and remain productive for decades, implying that orchards planted today must anticipate SGMA-mandated deadlines for fully sustainable basins, beginning in 2040. Rootstock resilience to water deficit is desirable because it would enable growers to sacrifice yield in drought years without jeopardizing the orchard itself. This project aims to optimize high-throughput greenhouse screens for resilience to water deficit, and to identify predictive markers for rootstock breeding through screening of diverse germplasm.	$206,995.00
California Department of Food and Agriculture	$23,844,114.26	40. Regional Orchard Soil Health and Greenhouse Gas Emissions After Whole Orchard Recycling	Whole orchard recycling (WOR), the process of returning orchard biomass to the soil, can significantly increase soil organic carbon (C), and reduce greenhouse gas (GHG) emissions compared to removal or burning. New incentives to reduce GHGs and sequester C suggest that WOR is a viable method to enhance the sustainability of orchard production practices. More than 200,000 acres of California almond orchards are approaching the end of productive life. Regional surveys are needed to document differences in C storage and changes to overall soil health in different soil types and climate regimes in WOR replanted orchards. Changes in total GHG emissions of all three major GHGs (carbon dioxide, nitrous oxide, and methane) are needed to understand if adoption of WOR by growers will facilitate the mitigation of climate change.	$449,209.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	$23,844,114.26	41. Extension of the CropManage Decision-Support System to Viticultural Management	The CropManage (CM) decision-support web-application was originally developed by the University of California Cooperative Extension (UCCE) to address irrigation and nutrient management in cool-season vegetables. CM has undergone extensive verification in scientific irrigation trials in Salinas Valley, performed in concert with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), and currently serves over 2,000 specialty crop stakeholders. This proposal would extend CM operations to vineyards, which rank highly among statewide planted acreage and revenues. As a heavily managed perennial crop, grapes are somewhat more complex to model than vegetable crops. This project will involve introduction of a vineyard water stress component within CM, addition of sub-models for nitrogen management and early-season depletion of stored soil moisture, and accounting for cover crop and canopy management.	$385,538.00
California Department of Food and Agriculture	$23,844,114.26	42. Management Solutions for Fusarium Falciforme, an Emerging, Destructive Disease of Tomato and Other Annual Specialty Crops	Fusarium falciforme is emerging in California as one of the most destructive diseases of tomato, rapidly killing plants and significantly reducing yields. Recent work indicates this is also a pathogen of cucurbits, pepper, and legumes. The goal of this project is to establish fundamental management parameters that can effectively mitigate losses in affected specialty crops by: 1) determining pathogen host range, 2) establishing optimal and harmful crop rotations (targeting management in tomato), and 3) identifying resistance in commercial cultivars of tomato, pumpkin, melon, and other specialty crops. The project team will transfer new information and technologies through diagnosis and management guidelines and workshops, outreach publications and presentations, and diagnosis services.	$202,536.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	$23,844,114.26	43. Advanced Breeding for Broad Genetic Resistance to Downy Mildew in Spinach for Organic Production	In spinach, new genetic resistance-breaking races of downy mildew (DM) appear every two years, threatening crops, especially for organic production. This project extends the project team's current program by: 1) developing race-specific DNA assays to survey DM diversity in spinach growing regions over two years, 2) genetically mapping genes and breeding broad genetic resistance to DM for organic production to reduce losses, and 3) training students in pathology, plant breeding, and extension, and extending knowledge to growers and industry personnel. The impact of this project will be measured with: 1) survey and interview data from the University of California Cooperative Extension (UCCE), and industry personnel and growers, 2) the specificity and adoption of in-field DM assays, 3) the development and adoption of germplasm with improved genetic resistance across multiple DM races, and 4) experiential learning opportunities by students. Outreach will be achieved with workshops, field days, professional classes, meetings, internships, and media.	$449,374.00
California Department of Food and Agriculture	$23,844,114.26	44. Early Detection of Botrytis Species and Rapid Characterization of Fungicide-Resistant Isolates in Strawberry	Strawberry production, distribution, and retail suffer from significant losses due to fruit spoilage caused by Botrytis species (spp.). The disease is not easily detectable until fruit show visible infection symptoms. The project proposes to develop non-destructive methods for early detection of Botrytis via multi/hyperspectral imaging and sensing of volatiles, allowing the timely application of disease management in the field, decision making at harvest, and control conditions during storage and distribution of fruit. The project also plans to design a rapid and precise clustered regularly interspaced short palindromic repeats (CRISPR-Cas) approach for detecting known fungicide-resistant Botrytis isolates in the field without the need for a polymerase chain reaction (PCR), in order to support targeted disease control. These tools will be evaluated in commercial settings ensuring their widespread applicability.	$298,903.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	$23,844,114.26	45. Systematic Identification of Oomycete Plant Pathogens Important to California Specialty Crops	Virtually every specialty crop is susceptible to an Oomycete plant pathogen (Phytophthora, Pythium, Phytopythium), so having a method for systematically identifying all species in a production system would facilitate improving management practices as well as provide a means for monitoring the presence/spread of regulated invasive species. This project expands the validation of an existing marker technology to address this need using DNA sequence analysis of a highly specific selectively amplified template from environmental samples. A database of sequence data for species identification has been under development, and along with tools for assisting in analysis, is listed on a publicly available website. The proposed research will provide a more comprehensive sequence database and validate the technology for pathogen identification/quantification on a broader scale for use in California specialty crop production systems.	$442,411.00
California Department of Food and Agriculture	$23,844,114.26	46. Host Resistance and Fumigation Alternatives for Control of Macrophomina Phaseolina in Strawberry	Disease caused by Macrophomina phaseolina is a serious constraint on strawberry production in California. Robust resistance is not currently available in cultivars, and little is known about alternatives to soil fumigation for management of this disease. The goal of this project is to accelerate efforts to breed Macrophomina-resistant strawberry cultivars and test non-fumigation methods for disease reduction. The outcomes of this project will result in significant progress by strawberry breeding programs in producing cultivars with resistance to Macrophomina, validation of Macrophomina-resistance for 28 off-patent cultivars that breeders can use as resistance donors, critical information on the genomics of resistance to this pathogen, and non-fumigation methods for disease control.	$318,796.00
California Department of Food and Agriculture	$23,844,114.26	47. Interregional Surveillance of Spinach and Lettuce Downy Mildew in California to Improve Management Practices	Downy mildews (DM) are major disease constraints for spinach and lettuce industries in California, causing severe damage to leaves and rendering the fresh products unmarketable. DMs can be managed with the application of fungicides, but routine fungicide applications result in large expenditures and can lead to fungicide resistance in the pathogen. There is also an increasing demand to limit chemical inputs due to the potentially negative environmental impacts. This project aims to: 1) multiplex two current detection assays into one for dual pathogen detection in a single a reaction, 2) determine levels of these	$438,518.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			pathogens in different regions (Salinas, Imperial, and Coachella Valleys), and to 3) use this information to associate spore load with increased or decreased disease risk in the different regions examined.	
California Department of Food and Agriculture	$23,844,114.26	48. Testing New Apple Rootstocks in California	This project will focus on providing support for testing the viability of utilizing new rootstocks on California apples. In 2019, the California Apple Commission (CAC) met with Dr. Gennaro Fazio, Apple Rootstock Breeder and Geneticist of the United States Department of Agriculture, Agricultural Research Service (USDA, ARS), National Apple Rootstock Breeding Program in Geneva, New York. As a result of this meeting, the CAC was presented with the opportunity to participate in the study to test several of these new rootstocks in California. This grant will assist the industry in implementing rootstock trials that have the potential to increase the overall productivity of California apple growers, reduce the number of pesticides and post-harvest treatments, and create resistance to the destructive disease, fire blight.	$61,684.00
California Department of Food and Agriculture	$23,844,114.26	49. Preventing Xylella Fastidiosa in California Ripe Olive by Determining Susceptibility of California Ripe Olive Varieties	Xylella fastidiosa (Xf) is a plant pathogenic bacterium that causes economically devastating diseases worldwide and has a wide host range. Previous California Olive Committee (COC) funded research showed that California strains of Xf from field-infected olive trees can be transmitted by the glassywinged sharpshooter, but olive varieties used in California are resistant to California strains of Xf. In 2013, Xf was detected for the first time in Europe and devastated olive orchards in Italy. The Italian strain of Xf belongs to subspecies pauca, which is not known to occur in California. Currently, the California ripe olive industry utilizes and is reliant on two olive varieties for ripe olive production.	$60,180.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	$23,844,114.26	50. Varietal Improvement of Fresh-Market Long Bean to Overcome Biotic Stresses and Expand Production	Long bean (asparagus bean, Asian yardlong bean) is the vegetable type of cowpea; a climate-resilient and nutritious food legume grown by Southeast Asian farmers in the Central Valley of California and marketed to Asian immigrant communities across the United States. Insect pests are major threats, reducing yield and quality of all current cultivars. The project team will implement short-term plant breeding protocols and extension activities to develop resistant varieties. Sources of natural resistance found in African cowpea germplasm and existing knowledge of marker-trait associations for aphid and root-knot nematode resistance will be applied in marker-assisted breeding. Local cultivars with stacked resistance genes will be developed.	$404,041.00
California Department of Food and Agriculture	$23,844,114.26	51. Bio-based Antimicrobial Coatings for Reducing Risk of Cross-Contamination During Harvesting	The Center for Produce Safety will partner with University of California, Davis, to develop food ingredient-based antimicrobial coatings for harvesting equipment and tools. Cross contamination is a major food safety risk when pathogens from soil, humans, or other environmental factors are introduced or persist on harvesting equipment and tool surfaces during produce harvesting. The overall goal of this project is to develop field-deployable food ingredient-based antimicrobial coatings to manage cross contamination risks during harvesting. These antimicrobial coatings will be formulated with selected food-grade ingredients and a commonly used chlorine-based sanitizer.	$330,700.00
California Department of Food and Agriculture	$23,844,114.26	52. Waxing of Whole Produce and its Involvement in and Impact on Microbial Food Safety	The Center for Produce Safety (CPS) will partner with University of California, Davis, to assess the impact of commercial storage and finishing waxes on microbial food safety. After harvest, many fresh fruits and vegetables are washed and waxed to prevent premature rotting and to extend shelf life. Waxing has been widely used by the produce industry, but information about its impact on microbial food safety is very limited. To address this knowledge gap, this project will use citrus fruit (oranges and lemons) as the model commodities and conduct a systematic evaluation of waxes used by the produce industry. The microbial and chemical properties of a wide range of citrus storage and finishing waxes available from industry collaborators will be evaluated. Salmonella and Listeria monocytogenes will be separately inoculated into the waxes to mimic potential contamination of the wax	$238,336.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			at a packinghouse, and the survival of pathogens will be monitored at ambient temperature and 4°C.	
California Department of Food and Agriculture	$23,844,114.26	53. When the E. coli Hits the Fan! Evaluating the Risks of Dust-Associated Produce Cross-Contamination	The Center for Produce Safety (CPS) will partner with University of Arizona to better understand how wind-driven dust in agricultural environments can impact produce safety. Dust represents an understudied vehicle for microbial dispersal and produce contamination by pathogens. Dust deposits onto plant surfaces during cultivation and from wind-driven dust in agricultural environments. These deposits can impact food safety when the sources include particles from reservoirs of pathogens, both natural and those related to animal feedlot operations. This project will: (i) evaluate the role of dust in transferring foodborne pathogens to produce surfaces grown in eastern and western agricultural regions of the United States, (ii) determine the role of humidity in the deposition of dust on produce and the survival of pathogens in dust, and (iii) test dust particulates from animal operations in both regions for the presence of biomarkers that are indicative of fecal contamination and potentially the presence of pathogens.	$207,787.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	$23,844,114.26	54. Field Evaluation of Microfluidic Paper-Based Analytical Devices for Microbial Source Tracking	The Center for Produce Safety will partner with Purdue University to develop a novel and rapid risk assessment tool that can be used in the field by growers to assess fecal contamination. Foodborne pathogens on fresh produce can lead to serious health issues. The sources of these pathogens often are wild animals or animal feeding operations. Current methods for assessing the risk of animal-source contamination on produce are costly, time-consuming, and lab-based. The anticipated outcome of this project is a validated, field-deployable growers' risk assessment biomarkers investigative tool (Grower's Risk Assessment Biomarkers Investigative Tool [GRABIT]) that will provide results of animal-source contamination within an hour (instead of waiting for days with traditional methods).	$413,500.00
California Department of Food and Agriculture	$23,844,114.26	55. Determination of Physical and Chemical Mechanisms to Prevent Cyclospora Infection	The Center for Produce Safety (CPS) will partner with University of Tennessee to identify new control measures for inactivation of Cyclospora in agricultural water and on the surface of produce. Cyclospora is a ubiquitous parasite that causes gastrointestinal illness in humans and is typically acquired through consumption of contaminated water or contaminated fresh produce. In 2018, the first Cyclospora infection tied to domestically grown produce was reported, demonstrating the increased threat to U.S. consumers. Few studies have investigated methods to inactivate Cyclospora due to two bottlenecks: the inability to culture the organism has limited the number of oocysts that can be collected for inactivation studies; and the viability or infectivity of Cyclospora oocysts can only be assessed by analysis of sporulation rates, which must be determined microscopically by a trained investigator.	$419,521.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
California Department of Food and Agriculture	$23,844,114.26	56. Survival of Infectious Human Norovirus in Water and on Leafy Greens	The Center for Produce Safety (CPS) will partner with University of Georgia to assess the survival of infectious human norovirus in water and on lettuce. In the United States, the majority of foodborne illnesses are caused by human norovirus (HuNoV). Lettuce and other leafy greens are most often implicated in outbreaks associated with HuNoV. Previous research has reported the presence of the virus genetic material in surface water, but data on the survival of the infectious virus in the water are limited. Until recently, it was challenging to determine HuNoV infectivity because the virus was difficult to grow in cell culture; however, a new cell culture system based on human intestinal enteroid (HIE) cells was developed to measure HuNoV infectivity.	$219,143.00
California Department of Food and Agriculture	$23,844,114.26	57. Digital Farm-To-Facility Food Safety Testing Optimization	The Center for Produce Safety (CPS) will partner with University of Illinois at Urbana-Champaign to create an integrated model to define optimum food safety testing for produce. Effective food safety testing in the produce industry is limited by inconsistent requirements for product testing and a history of approaches focusing on single points in the supply chain. This project will build on previous work simulating both in-field and packinghouse pathogen product testing to create an integrated production, harvesting, processing, and packing model to define optimum food safety testing schemes for produce. To do this, the project will first build a Field-to-Facility model of leafy green produce safety testing using spreadsheet- and flowchart-based computer simulation.	$236,936.00
California Department of Food and Agriculture	$23,844,114.26	58. Overcome Critical Food Safety Challenges of Blueberry Harvesting	The Center for Produce Safety (CPS) will partner with University of Georgia to help blueberry growers and packers improve the microbial safety of harvested blueberries. U.S. blueberry growers and packers implement Good Agricultural and Management Practices to ensure berry safety. However, berries are grown in the field and are prone to contamination by microorganisms. Containers or lugs for harvested berries may carry a relatively high level of microorganisms and, if not properly cleaned and sanitized, the lugs can transfer the microorganisms from one load of fruits to another. The hygiene condition of berry lugs and other harvest containers and equipment is very important to the microbial safety of harvested blueberries. This	$209,817.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			project will first collect information about the cleaning and sanitation practices currently used by blueberry growers/packers, through anonymous online and in-person surveys in different U.S. states.	
Colorado Department of Agriculture	$861,488.32	1. Colorado Pavilion at Produce Marketing Association (PMA) Fresh Summit 2021	The Colorado Department of Agriculture (CDA) will partner with Colorado produce associations, growers, and handlers to exhibit at the Produce Marketing Association's (PMA) Fresh Summit Expo, to be held in New Orleans, Louisiana on October 21-23, 2021. A Colorado Pavilion at PMA, the largest produce expo in the United States, increases exposure to and sales potential of Colorado specialty crops and companies.	$71,000.00
Colorado Department of Agriculture	$861,488.32	2. Promoting Success for Specialty Crop Vendors and Farmers Markets in Colorado	The Colorado Farmers Market Association will provide support to improve critical business skills among specialty crop vendors at farmers markets and enhance the promotion and outreach of farmers markets throughout Colorado.	$62,127.00
Colorado Department of Agriculture	$861,488.32	3. Developing Educational Opportunities for Beginning and Small-Scale Produce Growers in Colorado	The Colorado Fruit and Vegetable Growers Association will provide conference scholarships and free membership to beginning and small-scale produce growers to increase their production and business management knowledge and foster networking relationships with growers, buyers, and suppliers around the state.	$8,096.00
Colorado Department of Agriculture	$861,488.32	4. Increasing Colorado Fruit and Vegetable Sales Through Consumer Promotion tours, Youth Education and Social Media	The Colorado Fruit and Vegetable Growers Association will increase sales of Colorado produce in 2021 and 2022 through promotional activities including social media campaigns, public bus tours of produce farms, increasing youth interest in produce, and implementing new tactics from a national produce advocacy conference.	$45,327.76

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Colorado Department of Agriculture	$861,488.32	5. Evaluating the Potential for Bio-pesticides in Colorado Potato Production	To enhance the competitiveness and sustainability of Colorado's potato specialty crop sector, the Colorado Potato Administrative Committee (CPAC) and scientists at Colorado State University (CSU), in collaboration with potato grower cooperators in the San Luis Valley (SLV), will evaluate the efficacy and profitability of bio-pesticide usage in potato production. The proposed project aims to conduct and evaluate a bio-pesticide field trial for potatoes in the SLV, develop science-based information related to the expected impacts of bio-pesticide utilization on potato yield and quality.	$44,991.00
Colorado Department of Agriculture	$861,488.32	6. Colorado Potato Education and Distribution throughout Colorado Public School Systems	The Colorado Potato Administrative Committee (CPAC) will increase market access and education of Colorado Potatoes throughout the Denver Public School Systems by offering direct shipments of fresh potatoes and educational materials and workshops for students, parents and faculty.	$27,247.40
Colorado Department of Agriculture	$861,488.32	7. New Training Systems and Rootstocks to Maximize Colorado Cherry Orchards' Productivity and Fruit Quality Potential	Colorado State University through a multi-faceted approach will 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 sweet cherry growers with knowledge and technology to produce more value-added fruit with less inputs and provide consumers with fruit of consistent and excellent quality. New sweet cherry cropping systems that are resilient for the Colorado growing conditions and improve productivity and fruit quality will be evaluated.	$30,475.00
Colorado Department of Agriculture	$861,488.32	8. Cultural Methods in the Spread and Severity of Cytospora Canker in Colorado Peach Orchards	This project, lead and executed by Colorado State University, aims to develop IPM strategies for Cytospora canker on peaches in Colorado caused by Cytospora plurivora. We will build on previous research that examined the epidemiology of Cytospora canker using a molecular maker specific to C. plurivora. Our goal is to determine if cultural factors can be used to reduce the probability of new infections on orchard trees.	$90,327.00
Colorado Department of Agriculture	$861,488.32	9. Developing Best Management Practices for Organic Chickpea Production	Colorado State University will study best management practices for organic chickpea production. We expect this project to provide practical guidelines for organic producers to successfully grow chickpea. Since a good market is currently available for organic chickpea, we expect the findings of this project to be adopted by growers	$58,914.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			immediately and organic chickpea production and sales to expand in the state.	
Colorado Department of Agriculture	$861,488.32	10. Peach Cold Hardiness Monitoring and Management for Improved Grower Frost Control	Colorado State University through a multi-faceted approach will address peach cold damage challenges in Colorado and will identify resilient genotypes and cultural management strategies and utilize decision-support to mitigate cold damage. The general aim of this project is to provide growers with knowledge and technology to improve peach production resilience in the state of CO. Colorado peach industry will be benefited by the implementation of this proposal via recommendations on cultivar selections and best management practices to maximize early acclimation, hardiness and increase productivity, economic returns and minimize losses.	$37,635.00
Colorado Department of Agriculture	$861,488.32	11. Specialty Crop Production Research, Technical Support, and Coordination for Colorado Growers: 2021	The Colorado State University (CSU) Specialty Crops Program (SCP) Coordinator will oversee and conduct well-focused research combined with technical support and outreach to provide Colorado specialty crop producers with science-based information to stimulate innovation, competitiveness, and success.	$81,148.00
Colorado Department of Agriculture	$861,488.32	12. Develop High Elevation Growing Guides and Demonstration Spaces	Fort Lewis College - The Old Fort at Hesperus will coordinate regional specialty crop producers to develop twelve growing guides that address farming in high elevation, short growing seasons, or arid, irrigation-dependent environments. The team will prioritize topics related to season extension, water, irrigation, soil fertility, cover crops, seeds, transplants, weeds and pests.	$78,745.00
Colorado Department of Agriculture	$861,488.32	13. Farmer to Farmer Mentor Network to Support Training Programs in Colorado	GoFarm's Farmer to Farmer Network will support English and Spanish speaking beginning specialty crop farmers on Colorado's Front Range by increasing their knowledge and skills to produce more crops using sustainable practices and helping them to build viable businesses by connecting them to experienced mentors who are paid for their time.	$39,351.00
Colorado Department of Agriculture	$861,488.32	14. Preserving Colorado's Rare and Endangered Apple Genetics to Enhance	Montezuma Orchard Restoration Project (MORP) will release rare and endangered apple varieties that are historic to Colorado and have tolerated pests, disease, and drought for over 100 years to hundreds of	$87,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
		Specialty Crop Market Opportunities	Colorado specialty crop stakeholders through propagation, identification, education, and distribution activities.	
Commonwealth of the Northern Mariana Islands Department of Lands and Natural Resources	$243,423.25	Specialty Crop Cooking Demonstration Project	The Cooking Project will be managed by the Division of Agriculture. The project is designed to promote traditional cooking using specialty crops on the islands of Rota, Tinian and Saipan. The project will hire chefs on all three islands to cook different local recipes at major events or inside stores for the people to learn and try to cook these traditional recipes. The recipes will also be collected and printed in a pamphlet that will be given to the people to reinforce what they've learned from the demonstrations.	$43,500.00
Commonwealth of the Northern Mariana Islands Department of Lands and Natural Resources	$243,423.25	Ma'afala Breadfruit Project	Once the Ma'afala breadfruit trees are ready for distribution, the announcement will be made to inform the community about the breadfruit trees. Those who are interested need to sign up and the staff will assess their farms first before giving them the plants. This will prevent people from taking plants but have no place to grow them. Each person will be entitled to one plant. Participants 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. The Division of Agriculture will be the applicant for this project. It has an existing land that can be used to plant up to 1,000 Ma'afala trees without any problem. It also has two nursery facilities where these breadfruit trees can grow until they're big enough to be transported to existing Ma'afala area or to their final destinations on Saipan, Tinian and Rota.	$65,000.00
Commonwealth of the Northern Mariana Islands Department of Lands and Natural Resources	$243,423.25	Specialty Crop Workshops	The Division of Agriculture will partner with the Northern Marianas College Community Research Education and Extension Services and the Bureau of Environmental and Coastal Quality to conduct a series of workshops for the farmers to learn about the different types of fertilizers, their purposes and their applications throughout the life of the specialty crops. The farmers will also learn about the different types of pesticides and insecticides, and to become certified applicator of these materials. The workshops will not only be held on Saipan, but also on the neighboring islands of Tinian and Rota. The implementation	$39,447.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			of this project would allow the farmers to be knowledgeable about using fertilizers for their plants to be healthy and yield more, as well as to be safe for public consumption. Other workshops including marketing of the specialty crops will also be conducted to benefit the farmers. Staff of these organizations will be conducting these workshops, including off island professionals who will be contracted to provide the necessary services. The project will also utilize the farmers in sharing their knowledge and experience.	
Connecticut Department of Agriculture	$441,555.45	Project 1 - Increasing Access to Specialty Crops by Removing Barriers to Adopting Online Ordering Systems	CitySeed will provide technical support to and facilitate peer-to-peer exchanges with specialty crop farmers to pilot an online sales platform. This platform will boost fruit and vegetable sales at farmers markets as well as on-site farm sales across the state during and outside of the current health crisis. Our goal is to build capacity among fruit and vegetable farmers in and outside of our network to expand current access points to accommodate online sales and grow a new customer base.	$19,294.00
Connecticut Department of Agriculture	$441,555.45	Project 2 - Ecotype Project: A Native Plant Based Approach to Agrarian Resilience	The Northeast Organic Farming Association of Connecticut (CT NOFA) champions climate change adaptation strategies as central to its mission and to a resilient future of agriculture in Connecticut. The local and global decline in beneficial insects (e.g., bees) due to climate change, habitat loss, and other factors threatens the future of farming that depends on pollination from these insects. CT NOFA is working across Connecticut on an innovative approach to increasing pollinator habitat: regional seed production. The objective of this project is to increase the number and diversity of local ecotype native plants growing in our region. CT NOFA is working with farmers, conservation scientists, homeowners, land trusts, nursery growers, and botanists to increase the seed available to do this work. To this end, CT NOFA will be offering “Seed School” to farmers and stakeholders across our state to develop the skills needed for seed production.	$73,912.88

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Connecticut Department of Agriculture	$441,555.45	Project 3 - Carving a Path for Limited Resource New and Beginning Farmers	The Connecticut Department of Agriculture (DoAG) will enhance the competitiveness of specialty crops by providing programs to limited resource new and beginning specialty crop farmers across Connecticut. The DoAg will encourage access to land through partnerships and subsidized leases for limited resource farmers; promote the recruitment, education and training of limited resource and socially disadvantaged farmers in specialty crops through exploring the formation of apprenticeship and mentorship programs. DoAg will seek to develop priorities for state programming through focus groups. We will work to encourage ag business development and careers in the ag industry by providing more inclusive opportunities with universities, nonprofits, other state agencies and established organizations.	$259,500.00
Delaware Department of Agriculture	$344,692.93	Building Community Resilience through Specialty Crops	A Resilient Garden for Specialty Crops (project) will build and strengthen the resilience of community food systems and enhance the competitiveness of specialty crops through increased access, knowledge, and consumption for Wilmington's underserved and vulnerable populations. The Delaware Center for Horticulture proposes to transform areas of current demonstration gardens, which are accessible to urban residents and free to the public, into a model for resilient spaces which will provide a sense of our shared history, buffer us during the current Coronavirus emergency, and protect us from future threats. Specifically, this resilient garden for specialty crops will integrate elements of DCH's urban agricultural and education programs, providing educational, interpretive, visual and tangible examples of how we can all strengthen our resilience in times of stress. Specific to this proposal, DCH will build demonstration specialty crop raised beds in our back garden, host family and adult educational programs on how to grow your own food, and engage resident seniors at the Wilmington Housing Authority's affordable housing senior facility located next door to our facility.	$27,600.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Delaware Department of Agriculture	$344,692.93	Connecting Consumers with Specialty Crop Producers through Food, Cooking, and Agricultural Literacy	The Delaware Department of Agriculture Communications and Marketing Section will educate youth and adults on who and how specialty crops are grown, how to prepare Delaware Grown recipes, and the benefits of eating locally grown through the use of virtual farm trips, hands-on learning events and videos created in the Delaware Grown kitchen teaching center. During the COVID-19 pandemic, Delawareans realized how important family farms are in supplying the food they need to eat and feed their families. In order to source food, many people reached out to local farmers for the first time to get access to meats, eggs, herbs, fruits and vegetables. Local farms supplied food to the Food Bank of Delaware and other local pantries. And Delawareans lined the streets of our towns, waiting to gain entrance into the local farmers' market to purchase food produced locally. The sales of specialty crops, value-added products, and other agricultural commodities are currently up for calendar year 2020. However, we know that if we don't engage the public with who grows their food, how it is safely produced, and give them the tools to prepare food that in many cases they would never try on their own, that much of this customer base will dissipate as the supply chain in stores returns to near normal.	$50,000.00
Delaware Department of Agriculture	$344,692.93	Effectiveness of Deer Deterrent Methods to Safeguard Specialty Crops	DSU Cooperative extension will quantify the effectiveness of three deer deterrent strategies (electric fence, construction fence, and a double row wire fence) that are reported to protect specialty crops from grazing damage over two growing seasons. Simulated plots will be established, baited with game feeders, randomly assigned to one of the treatments, and monitored with game cameras to quantify the number of deer that visit each plot. Findings from this research will be used to formulate management recommendations that will be disseminated to specialty crop producers in DE through field days, included in the DSU Farm School curriculum, and presentations at DE Ag Week.	$46,820.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Delaware Department of Agriculture	$344,692.93	Mushrooms for Many: Turning Low-Value Forest Products into Locally-Available and Nutritious Food Products	Greer Stangl will explore the viability of woodland mushroom cultivation using trees and tree by-products of low commercial-value native to Delaware and readily available throughout Delaware and the Delmarva Peninsula. By making cultivated Shiitake and Wine Cap mushrooms locally available to already thriving farmers markets and farm-to-market chefs on Delaware's "Culinary Coast", consumers, producers, and the local economy will benefit. These findings will be shared with grower groups and experts. This project will serve as a model for other producers in Delaware and on the Delmarva Peninsula; supply locally cultivated mushrooms to consumers, value-added producers, and wholesale markets; inform landowners about an added use of their forested land; and provide incentive to remove invasive trees in exchange for use in mushroom production or other commercial uses.	$27,236.50
Delaware Department of Agriculture	$344,692.93	MWUL & Urban Acres--Individual Vertical Farm Initiative	Understanding the current need within vulnerable communities, this project will provide needy families with a customized indoor vertical garden, enabling individuals to grow and turn their own produce throughout the year. More importantly, this initiative serves as a springboard in introducing underserved communities to fresh produce and maintaining a healthy lifestyle. The U.S. Department of Agriculture defines food insecurity as limited or uncertain availability of nutritionally adequate foods or uncertain ability to acquire these foods in socially acceptable ways. In 2016, 12% of Delaware's 16.8% of Delaware's children were food insecure. And recent studies from feedingamerica.org show that in Delaware, 117,320 people are struggling with hunger (based upon food bank data). Unfortunately, these numbers are higher within the two zip codes of 19801 and 19805 which have also been decimated due to the Covid-19 Pandemic.	$31,440.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Delaware Department of Agriculture	$344,692.93	No-Till Production for Specialty Crops on Two Scales	University of Delaware's Weed Science Program will conduct research at the Carvel Research and Education Center to improve soil health in specialty crops. Specialty crop production generally relies on preplant tillage to prepare a good seedbed for planting. This springtime tillage can cause loss of soil structure and stimulate weed germination. No-till is not widely used in specialty crop production because of the concern about residue from the previous crop interfering with planting and harvesting, cooler soil temperatures and difficulty of smaller planters to get proper crop establishment. This proposal aims to address these issues with seedbed preparation in the fall, followed by cover cropping and then planting into a weed-free seedbed and not stimulating weed seed germination. Potential benefits include improved soil health, reduced weed populations, and earlier planting dates; all things that can reduce expenses and improve farm income. This proposal will examine strategies for both large-acreage crops (i.e. processing peas or sweet corn) as well as small acreage (i.e. farm market operations). This research will look at soil structure, soil nutrients, weed seedling number and growth, and crop vigor and yield to determine the benefit of the various systems.	$32,607.13
Delaware Department of Agriculture	$344,692.93	Research on New and Reemerging Vegetables for Processing in Delaware	The University of Delaware is the main institution in the Mid-Atlantic region conducting research on processing vegetable crops due to the historically large acreage in the state. The goal of this project is to provide a research base on expanding processing vegetable crop opportunities for Delaware. Processing companies will be surveyed for potential opportunities for vegetable crop sourcing from DE. We will then conduct adaptation research on selected processing vegetable crops to address opportunities. This project will address research needs to support processing vegetable production in Delaware. This includes evaluating recently identified processing crop opportunities for the region (such as sweet potatoes, and beets), reevaluating past crops for current potential (such as specialty lima beans), and evaluating new processing crops for the region (such as swiss chard and beet greens). This project will address these areas by providing the necessary applied research base.	$48,934.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Delaware Department of Agriculture	$344,692.93	Researching and Education for Growing Food in Extremely Limited Spaces	Timothy Myers, operating as "Fresh Start Microfarm" will implement a program that researches the types and amount of food that can be grow in extremely small spaces. The main food items to be researched will be microgreens and mushrooms. These will be grown in small areas that are unused in one's household (Garage, Attic, Closet) as well as in small structures (outdoor sheds, greenhouse, utility trailer). This project will serve to educate people on the subject of growing food in small areas. Many people believe that they need a large space to grow food, and this project will help those people realize that it is possible to grow food in incredibly small spaces. The program will focus on educating people who don't have access to fresh, nutrient dense food. This will allow them to implement the systems that I will research and add nutrient dense food to their diets.	$33,402.15
Delaware Department of Agriculture	$344,692.93	Specialty Crops for Healthier Communities (SCHC)	The Boys & Girls Clubs of Delaware proposes to develop a garden/greenhouse project on the grounds of the Western Sussex Boys & Girls Club in Seaford, Delaware. The project, Specialty Crops for Healthier Communities (SCHC) will incorporate an on-site garden as the basis of an educational program to teach youth and families the importance of specialty crops such as blueberries, blackberries and goji berries. In addition to berries, the youth participants will learn how to plant, care for, harvest and prepare their vegetables they have grown for consumption. To help promote the value of fresh grown produce and berries, monthly community dinners will be held as educational outreach to the community and opportunities for "U-Pick Berries Days" and Farmer's Markets will help to make these products more assessable to the general community.	$46,492.50
University of the District of Columbia	$241,627.00	Mitigating Climate Change through Soil- Carbon Sequestration Techniques in Regenerative Urban Agriculture' Curriculum Development and Implementation	Common Good City Farm will mitigate climate change and its effects on specialty crop production by developing and teaching curriculum on regenerative urban agriculture techniques used in specialty crop production to mitigate and build crop resilience to climate change.	$55,398.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
University of the District of Columbia	$241,627.00	Latin American Youth Center's Food and Nutrition Program	Latin American Youth Center (LAYC) will improve access, awareness, and knowledge of specialty crops through the Food and Nutrition Program (FNP). FNP will teach youth how to identify, grow, cultivate, and cook specialty crops through urban garden classes, cooking classes, and drop-in classes at LAYC's District of Columbia (DC) site and partner locations. Participants who complete FNP will take a pre- and post-test to measure their increased skills and knowledge of specialty crops.	$55,398.00
University of the District of Columbia	$241,627.00	Maya Angelou Schools Seeds for Success Internship Program	The Maya Angelou Schools, an alternative charter school network located in Washington D.C.'s Ward 7, will implement a workforce development program for socially disadvantaged farmers who are students in our Young Adult Learning Center (YALC) to help them gain knowledge and skills in urban farming and food distribution.	$55,398.00
University of the District of Columbia	$241,627.00	Your Greens is a One in a Million Community Supported Agriculture (CSA) program	IDEA Public Charter School will improve food access and enhance the competitiveness of specialty crops in underserved communities by developing a school-operated, community-supported agriculture (CSA) program for students and the community.	$55,398.00
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 1: Increasing Pollination of Florida Blueberries through Optimal Planting Design and the Use of Alternative Managed Pollinators	Blueberries are a growing and profitable industry in Florida with recent annual crop sales exceeding 60 million dollars. Pollination is arguably the most critical step in the formation of blueberry fruit and many FL growers have reported pollination problems recently. Historically, Florida blueberry growers have relied heavily on managed honeybees for pollination, but they are not the most effective pollinator, and reliance on a single species is risky and expensive. More recently, managed bumble bees have become an option, but limited studies have been done on them in FL blueberries. This study will: 1) determine the effects of cultivar planting arrangement on pollination and yields in FL blueberries, and 2) evaluate the use of managed bumble bees in combination with managed honeybees for FL blueberry pollination. Research will be conducted across multiple commercial farms and in a replicated trial. We will share results with growers through pollination demonstration events, online extension publications, and presentations at the annual growers meeting. Project impact will be determined through a long-term grower survey. Increasing pollination of Florida blueberries will significantly increase crop revenue and the sustainability of growing blueberries in Florida.	$168,815.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 2: Improved Silkfly Control for Sweetcorn	Silkflies are a major pest of fresh market sweetcorn in Florida. Silkfly damage to sweetcorn ears and silks make ears unmarketable for fresh market. The long-term goal of this project is to develop sweetcorn breeding lines with enhanced silkfly resistance and develop methods to improve silkfly monitoring to enable more efficient use of pesticides. Florida produces nearly a quarter of all the sweetcorn grown in the US. Sweetcorn is mostly produced in South Florida for the fresh market (more than 30,000 acres) with an industry value in excess of $100 million annually. Silkflies are currently a major problem for Florida sweetcorn growers as insecticides are only effective against the adult flies. Therefore, daily spraying is commonly required to prevent infestation during ear development. This added production and environmental cost is coupled with the risk that heavy infestations can lead to entire fields being lost, as silkfly damage renders them unsuitable for the fresh market. Sweetcorn producers therefore have an urgent need both for sweetcorn varieties that have enhanced resistance to silkflies and more effective silkfly monitoring techniques so that pesticide use can be optimized.	$149,936.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 3: Develop Efficient Post-Harvest Debittering Technologies for Hlb-Infected Citrus Fruits and Juices	This project is in collaboration with the Florida Citrus Processors Association, Gulf Citrus Growers Association, and Florida Citrus Mutual. Florida produces 60% of the citrus in the United States and 90% of Florida oranges are processed into juice. Effectively all orange and grapefruit trees in Florida are infected with HLB (Huanglongbing, or citrus greening) to varying degrees. Grapefruits are affected more severely by HLB than orange trees. HLB-infected oranges have strong bitter and sour tastes due to higher content of limonin, nomilin, and citric acid. HLB-infected grapefruits also contain these compounds in addition to the more bitter naringin. There is a pressing need to implement effective debittering technologies to produce citrus fruits and juices with better tastes and flavors for consumers. To address these issues, we will design and test post-harvest treatments for HLB infected oranges and grapefruits using ethylene and ethephon for metabolic degradation of bitter and sour compounds. We will then identify adsorbent resins and resin combinations with the highest selectivity towards bitter compounds in HLB affected juices, optimize debittering operation by determining adsorption rate, equilibrium, kinetics, and subsequent mathematic modelling and pilot testing. Finally, we will evaluate the taste, favor, and overall consumer acceptability of post-harvest treated and HLB infected fruits and juices using sensory panels. Research findings will be disseminated to citrus growers and processors throughout the state. By improving the flavor and quality of citrus juice produced from HLB infected fruits, this project is expected to significantly increase the sales and profits of Florida citrus.	$141,389.00
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 4: Evaluating the Efficacy of Limonene Scented Kaolin and Two New Commercialized Insecticides to Control Whiteflies in Tomatoes	The University of Florida will mitigate the spread of whitefly infestation in vegetables by investigating the use of limonene-scented kaolin (LSK) to control whiteflies in tomatoes. We found that kaolin's repellency against whiteflies is improved by adding limonene. We plan to 1) find the optimal concentration of limonene to be applied in the field in regard to cost and phytotoxicity, 2) investigate the efficacy of LSK when combined with conventional insecticide sprays, including new insecticides developed against whiteflies, and 3) evaluate LSK in farm settings in coordination with collaborative farmers.	$168,955.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 5: The Power to Pick. Would You Rather...? Specialty Crop Nutrients	Students have the power to pick but do they have the background knowledge to make informed decisions? Everyday students go into their school lunchrooms and have to make decisions on what they will eat. Many students enter the cafeteria without the background knowledge of what produce is grown in Florida, what important macro and micronutrients that produce supplies to their body and what nutrients their bodies need most. Florida Agriculture in the Classroom (FAITC) will create ten nutritional posters that will be put up in 1,000 cafeterias in the 67 Florida school districts. Each month for ten months a poster will be created that will cover an important nutrient that students need and the food options they have to intake those nutrients. The posters will be in the Would You Rather??? game format to keep the students entertained while waiting in cafeteria food lines. FAITC's grant will also include funding for School Garden Grant projects. Florida PreK-12 grade teachers will be eligible for the School Garden Grants. Grant recipients will be required to grow Florida specialty crops and use at least one lesson from FAITC's school garden curricula. These gardens will encourage students to learn about Florida's specialty crops, eat fresh fruits and vegetables and learn about healthy eating.	$43,884.20
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 6: Use of Traps to Monitor Silk Flies in Sweet Corn Fields and Adjacent Habitats	Corn silk flies (CSFs) are the most severe ear-feeding insect pests infesting sweet corn in Florida. These pests are intensively managed with insecticides. However, significant crop losses still occur, and improved management tactics are immediately needed. The proposed two-year project aims to complement previous and ongoing research by determining the active space of traps for CSF sampling, determining the trapping efficiency of traps for each CSF species, determining the relative abundance of CSFs in commercial sweet corn fields and adjacent habitats, and disseminating research results to Florida sweet corn stakeholders. Research and educational activities will be conducted by the University of Florida on commercial farms in the Everglades Agricultural Area, in the Homestead area, and at the University of Florida/IFAS Everglades REC in Belle Glade. The proposed project will provide sweet corn stakeholders with new CSF management recommendations encouraging the use of traps for CSF population monitoring and the consideration of adjacent habitats when	$98,689.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			scouting and applying insecticides. The adoption of these recommendations is expected to lead to a more effective CSF management strategy.	
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 7: Development of Sulfur Recommendations to Improve Nitrogen and Phosphorus Efficiency for Florida Potato Growers	The University of Florida - IFAS will develop the sulfur (S) recommendation to improve nitrogen (N) and phosphorus (P) efficiency for Florida potato growers, which will result in improved yield and water quality. Presently, Florida potato growers are applying excessive amounts of S, ~300 pounds/acre due to the lack of recommendation. The higher the S application, the lower N of N and P uptake by the plant. This negatively impacts crop yield and increases leaching and erosion of N and P. The objectives of this study are to develop S recommendations with different combinations of N and P rates on multiple sites to find the best combination for optimum yield. Water quality (leached water analysis); crop yield and quality; soil moisture; weather; S, N and P uptake; tissue sampling; and soil physical, chemical, and biological data will be used for this study. An economic optimum N rate (EONR) and maximum return to N rate (MRTN) will be compared for recommendations. A multispectral sensor will be used to monitor plant health and adjust fertilizer applications, which will help in developing yield prediction models. Significant outcomes of this study include an independent S recommendation for fresh market and processing potatoes, an optimum recommendation rate of N and P with S application. An online mobile application where growers will be able to access required S rates for their field conditions using maximum yield potential with ideal N and P rates. It will help in reducing N and P leaching and erosion.	$188,026.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 8: Thrips Management in Strawberry and Pepper Production	Chilli thrips, Scirtothrips dorsalis (Hood) (Thysanoptera: Thripidae) are difficult to manage in strawberries and peppers, both of which contribute to the billion-dollar specialty crop industry of Florida. About 88% of strawberry growers in Florida have double-cropped fields. Commonly, pepper is grown as the second crop. Both strawberry and pepper are highly susceptible to thrips. Chilli thrips can easily develop resistance to insecticides. Currently, a limited number of insecticides with varying modes of action are effective in managing this pest. Therefore, in this study, the strawberry and vegetable entomologists have joined forces to develop an improved integrated pest management program for thrips control by better understanding the population dynamics of pest thrips in typical double-cropped strawberry fields. Through cooperative effort of both entomologists and growers at the University of Florida, a well-rounded thrips management program will thus be developed that addresses the state and federal funding priorities, benefits the conventional strawberry and pepper growers, as well as the growers transitioning into organic production in Florida.	$294,854.00
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 9: Smart and Precision Sprayer for Tree Crops	University of Florida's (UF) Southwest Florida Research and Education Center (SWFREC) will develop a smart and precision sprayer for Florida tree crops. The overall goal of this project is to promote an environmentally friendly Integrated Pest and Disease Management (IPDM) by developing a smart spraying technology utilizing machine vision and sensing and artificial intelligence. This technology has a real potential to deliver more productive and sustainable agriculture, based on a more precise and cost-efficient approach, especially in a scenario of farming labor shortage and climate change. Dissemination of results will occur at grower meetings, field days, industry meetings, and production videos illustrating the technology.	$117,430.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 10: Improving Strawberry Water-use Efficiency Through Surge Irrigation Schemes and Plant Monitoring Technologies	Reducing Florida's water use, and nutrient loading is a priority to realize sustainable economic growth and to improve quality of life. Agricultural water-use represents around 40% of Florida's total water consumption. This project, conducted by the University of Florida, aims at reducing irrigation water-use in Florida through appropriating surge irrigation schemes for strawberry bareroot transplant establishment. Water-use, soil and plant water content, strawberry plant health and growth patterns, as well as yield will be observed using manual and technology-assisted imaging techniques for each surge irrigation scheme and tested variety. The results of this project will be demonstrated to Florida's strawberry growers through a series of field day presentations, extension events, and EDIS publications. We expect that implementing the surge irrigation schemes appropriated by this project will lead to up to 50% water-use savings, which accounts for billions of water gallons and leads to a reduction of nutrient loading.	$135,066.00
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 11: Development and Application of a Management Program for Blueberry Gall Midge in Florida's Blueberry Plantings	The University of Florida's Fruit and Vegetable IPM laboratory and the Blueberry Breeding and Genomics laboratory are partnering with the Florida Blueberry Growers Association to develop a comprehensive integrated pest management program to mitigate the establishment and spread of blueberry gall midge (BGM) in blueberry plantings. We will study the distribution and movement of gall midges and survey the population of gall midges on commercial farms in the various counties. Our primary goal is to develop and implement strategies to manage gall midge populations and improve yields in southern highbush blueberries. The project's outcomes include a better understanding of distribution patterns that will provide growers with a clearer understanding on what areas of the plantings are infested with BGM in space and time; a list of southern highbush blueberry cultivars that have demonstrated resistance to BGM and blueberry tip midge (BTM); the time of the year when BGM are expected to emerge; recommended replacement times for mulch to reduce pupal development; and investigate the effectiveness of reduced-risk insecticides on BGM, BTM, and their key parasitoids. We will provide information to stakeholders and blueberry growers on blueberry gall	$165,486.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			midge biology and management via grower meetings, field days, extension bulletins and web-based information.	
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 12: Increasing the Availability of Lettuce in Florida by Modifying Heat Tolerance	The lettuce season is currently shortened because cultivars used in Florida are not adapted to the warmer temperatures. High temperatures can reduce germination rates and cause tip burn and premature bolting, reducing marketable yields and the length of time lettuce can be grown profitably in Florida. University of Florida researchers will identify lettuce cultivars able to germinate at high temperatures and experiment with production on South Florida muck soils and North Florida sandy soils. An economic analysis will be conducted to compare production costs and potential returns from growing lettuce in the different regions and soil types. Heat-tolerant cultivars and the ability to grow on sandy soils may give Florida growers the opportunity to keep current markets, extend the production season, supply lettuce during market shortages, and expand production areas. This research will assist growers with decisions on the future of the leafy vegetable industry in Florida.	$156,519.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 13: Determination of Consumer Preference, Market Opportunities and Evaluation of Horticultural Requirements for the Finger Lime in Florida	This project builds on a previously funded FDACS study that sought to evaluate different rootstocks and fertilizer regimes to assess their suitability for finger lime (an HLB tolerant citrus relative) production. That previous study successfully established a finger lime plot under several different rootstocks and fertilizer regimes, and collected information on tree growth, development and HLB susceptibility. The finger lime trees will begin to fruit soon, and information about consumer's acceptance of the fruit will allow us to inform interested growers about potential market opportunities for the fruit. In addition, basic marketing information for citrus growers interested in finger lime production will be generated. The main objectives of this University of Florida project include (1) Identify the appropriate rootstock(s) for optimum finger lime production; (2) Identify the appropriate fertilizer regime for finger lime production (3) collect HLB and citrus canker incidence data (4) assessment of market opportunities for finger limes in the US East Coast market; (5) investigate finger limes' preferences in both institutional and consumers markets; (6) provide pricing information at the institutional and consumer's market level and (7) communicate with growers through seminars and publications to inform them about the results of the project.	$226,231.00
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 14: Nitrogen Management and Plant Quality Monitoring Using Optical Sensor Technology in Native and Non-Native Specialty Crops	This project, conducted by Florida International University, will demonstrate the use of non-destructive handheld sensors to precisely estimate the N requirement of specialty crops and help lower fertilizer costs and nutrient losses. In consultation with the stakeholders such as Pine Island Nursery, Costa Farms, Florida Association of Native Nurseries, and Fairchild Tropical Botanic Garden, various native (Cocoplum, Cabbage Palm, Red Mulberry, Satin Leaf and Wild Coffee) and also commercially grown non-native (Cocoa) plants will be used that are of great importance to the South Florida region for both their ecological and economical purposes. The study will also conduct a primary survey of sample farmers to assess their perception about the adaptability of this practice. The result of this study could serve as a guideline for nursery producers and landscape personnel as a fast and non-destructive tool for sustainable fertilizer management practices within the ornamental plant industry.	$82,677.37

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 15: The Impact of Mexican Competition on the Florida Tomato and Strawberry Industries: Industry Trajectories and Solutions	Florida tomato and strawberry industries have been threatened by the increasing competition from Mexico. The influx of imports from Mexico has depressed market prices and caused significant losses for Florida growers. Mexican government subsidy and cheap labor give Mexican growers a significant competitive advantage over their Florida counterparts, driving the rapid growth of Mexican imports. Florida industries and policymakers have been seeking effective mechanisms to address the challenge. Solutions include trade policy measures as well as development of new technologies (e.g., automation) to address labor issues. Policy makers and growers need a thorough study of how certain trade policy tools will affect the industry and how technological breakthroughs will change the industry trajectories. The objectives of this project are threefold. First, the researchers at the Gulf Coast Research and Education Center, University of Florida will quantify the economic impact of market challenges on the Florida tomato and strawberry industries with the most up-to-date data. Second, the team will examine the effect of potential trade policy tools on industry trajectories. Third, industry trajectories under different technology development scenarios will be further analyzed to provide insights to inform policy and business decision making.	$159,933.00
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 16: Production Optimization as a Weed Control Solution: Combining Designer Substrates and Strategic Fertilizer Placement for Weed Control in C	Nursery crops (ornamentals) are one of the most important specialty crops in Florida with annual sales of $3 billion, greater than many other specialty crops combined. Weed management is a continuing challenge for producers with an estimated cost of $11,000 per acre. Unlike other crop systems, nursery production is unique due to high diversity of crop species and because production practices (substrate composition, fertilizer type, irrigation regime, etc.) can be dramatically different based upon grower preference and nursery infrastructure. Desired outcomes of this project are to increase growers' profits by developing new weed management protocols based upon production practices that reduce the number of herbicide applications needed, reduce labor costs, and save growers millions of dollars across the state. To achieve project objectives, the University of Florida will conduct container and greenhouse experiments to optimize the combination of designer	$63,068.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			substrates and strategic fertilization for improved weed control and consistent crop performance.	
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 17: Florida Specialty Crop Growers Broadcast Media Campaign	The Florida Department of Agriculture and Consumer Services (FDACS) will address challenges facing growers as a result of the COVID-19 crisis and promote specialty crops through broadcast advertising in Florida's six largest markets. This campaign is designed to increase the competitiveness of Florida's specialty crops, by driving retail sales. The funds requested for this project will allow FDACS to contract media buying services and, as a result, promote specialty crop growers to approximately 80% of Florida's population. To maximize the reach of this project, FDACS' Division of Marketing will produce the commercial and support its message with an integrated marketing strategy. This strategy will include programmatic display ads, social media campaigns, digital coupons, email marketing campaigns, and merchandise displays at major retailers. These additional marketing efforts will supplement the commercial.	$315,486.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 18: Cold Hardy Citrus Marketing and Distribution Improvements	The Cold Hardy Citrus Association, a 501(c)(5) nonprofit, was formed to promote and develop the Cold Hardy Citrus industry by building a network of producers, packers, shippers and consumers to facilitate the exchange of information and ideas. The association encourages ongoing research into the developing, growing, husbandry, and marketing practices of the citrus industry. This marketing proposal is designed to increase retail and consumer demand and consumption for Northern Florida cold hardy citrus from approximately 3,000,000 pounds in 2019, to at least 8,000,000 pounds in 2021. We will develop and implement a strategic marketing plan to achieve these initial growth objectives, while building a foundation for continued growth as consumers become familiar with and enjoy cold hardy citrus varieties. This plan will include retailer and consumer market research; consumer-facing branding of the cold hardy fruit; design and creation of sales tools, website, packaging and merchandising displays; trade and consumer public relations and social media; regional trade show participation; and advertising.	$396,177.08
Florida Department of Agriculture and Consumer Services	$3,562,694.66	Project 19: Understanding and Predicting Food Safety Risks Posed by Wild Birds	The Center for Produce Safety will partner with University of Georgia to understand how wild birds serve as vectors for pathogens from nearby animal agriculture to produce fields. This project will examine the role of poultry and cattle in influencing the pathogens deposited onto fresh produce by wild birds. Mapping and modeling technologies will be implemented to develop risk profiles resulting from links between integrated or proximal animal agriculture and wild bird feces containing viable pathogens that are deposited on produce foliage. High-resolution molecular tools will be used to generate pathogen population profiles and, alongside genomic analyses, will be used to attribute pathogen source to zoonotic reservoirs associated with animal agriculture. Results of this study will be summarized in project reports, presented at the annual Center for Produce Safety Research Symposium, and published in peer-reviewed journals. The data collected will provide produce growers with science-based knowledge and tools to assess the risks that wild birds pose to food safety on their farms, based on farm-specific local and landscape farming practices. Additional outcomes include an industry guidance document released	$405,403.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			through University of Georgia Extension, and on-farm videos that demonstrate best practices for bird exclusion from produce.	
Georgia Department of Agriculture	$1,348,645.01	1. Fueling Georgia's Future	Fueling Georgia's Future is a collaborative specialty crop promotional program managed by the Georgia Grown Commodity Commission in partnership with the Georgia Department of Education. The goal of the program is to increase consumption of Georgia Grown specialty crops in school lunches. The program will achieve this outcome through promotional materials, events, and social media advertising distributed to Georgia schools.	$75,000.00
Georgia Department of Agriculture	$1,348,645.01	2. Georgia Knows Best	Georgia Knows Best is an initiative of Georgia Grown and the Georgia produce industry to increase awareness of Georgia specialty crops, and drive consumers to purchase Georgia produce over imports. The following crops will be featured: greens, sweet potatoes, squash, Vidalia onions, blueberries, peaches, sweet corn, and watermelon among others. Georgia Grown will utilize tactics heavy in digital and social media, but will also evaluate, budget permitting, video tactics such as YouTube TrueView and OTT/CTV.	$100,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Georgia Department of Agriculture	$1,348,645.01	3. Enhancing the Sustainability of Georgia's Citrus Industry	The Georgia Citrus Association (GCA) in partnership with the University of Georgia (UGA) proposes to promote the GA citrus industry and to increase the overall competitiveness and sustainability of the emerging Georgia satsuma industry by delivering comprehensive educational materials with reliable and effective research-based information on grower-identified topics that will help to solve pressing technical challenges at both pre- and post-harvest stages through presentations, demonstrations and/or other educational tools.	$29,997.72
Georgia Department of Agriculture	$1,348,645.01	4. Consumer and Retail Engagement and Education will Increase Specialty Crop Consumption	Currently there is a need to engage and educate consumers, students, and retailers alike on the importance of purchasing Georgia grown produce when they are in season. The individual choices of consumers and retailers will come together to have tremendous economic impacts for farms and their employees, local communities, counties, state, and ultimately the nation.	$100,000.00
Georgia Department of Agriculture	$1,348,645.01	5. Marketing Georgia Grown Products to National Retailers (2020 PMA)	This project will provide a national stage for Georgia growers and produce organizations to make more retailers aware of the high quality, nutritional value and diversity of the fruit and vegetables grown in Georgia. The Georgia Fruit and Vegetable Growers Association, working in cooperation with growers, commodity organizations and agribusiness companies across Georgia, will feature Georgia's specialty crop fresh produce industry as a part of a new 2020 PMA Fresh Summit being presented as a virtual trade show.	$20,000.00
Georgia Department of Agriculture	$1,348,645.01	6. Continuing to Provide Educational Resources to Increase Specialty Crop Producers Profitability (SERFVC)	The number of obstacles faced by the southeastern fresh produce specialty crop industry over the past several years has been unprecedented. From natural disasters to decreased markets, increased regulations to a worldwide pandemic impacting every aspect of a grower, packer, shipper operation, the need for sound decisions based on the latest technology and research is vital.	$80,000.00
Georgia Department of Agriculture	$1,348,645.01	7. Statewide Survey and Diagnosis of Citrus Canker in Georgia Groves	The citrus industry in Georgia has been growing exponentially in recent years. One of the greatest threats that citrus growers face is from the bacterial disease known as citrus canker. This disease is caused by a bacterium called by Xanthomonas citri subsp.	$80,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Georgia Department of Agriculture	$1,348,645.01	8. UV-C Radiation to Control Dollar Spot Disease in Turfgrass	UGA (PI: Dr. Bahri) will assess the efficiency of the UV-c radiation to control turfgrass diseases. The technology will be tested in the laboratory against the dollar spot and adapt to field conditions in order to reduce the environmental and economic impacts of the disease in the turfgrass industry. A robot with an efficient UV-c radiation system against dollar spot and optimized for the field will be developed to benefits golf course superintendents, sport fields managers, lawncare companies, homeowners and sod framers.	$109,980.00
Georgia Department of Agriculture	$1,348,645.01	9. Exploring Novel Frost Protection Strategies for Peach and Blueberry Production	UGA (PI: Dr. Dario Chavez and co-PI Dr. Mani Sudhagar) fruit research and extension specialists in Griffin Campus, Griffin, GA and a Materials and Biomedical Engineer will help identifying new frost protection strategies for the Georgia peach and blueberry industries. Freeze/frost damage has affected peach and blueberry production in Georgia in four out of the last five years. Freezes have cost both industries millions of dollars in losses.	$90,000.00
Georgia Department of Agriculture	$1,348,645.01	10. A Sustainable Weed Management System for GA Organic Vegetables	UGA (PI: Dr. Timothy Coolong) will develop an integrated irrigation and cultivation management system that can be used by organic farms in Georgia to effectively manage weeds. We will develop cultivation systems using off-the shelf implements such as finger weeders and sweeps combined with shallow subsurface drip irrigation in two organic cropping systems that represent two weed pressure scenarios.	$36,400.00
Georgia Department of Agriculture	$1,348,645.01	11. Biorational Approaches for Detecting and Managing Oomycete Diseases on Vegetables	UGA (PI: Dr. Pingsheng Ji) will improve management of Phytophthora blight (Phytophthora capsici) and downy mildew (Pseudoperonospora cubensis), two destructive oomycete diseases on vegetables, by developing and integrating sustainable and effective disease management approaches and sensitive detection and timely monitoring of fungicide resistance development.	$100,000.00
Georgia Department of Agriculture	$1,348,645.01	12. Biology and Management of Redheaded Flea Beetle in Nurseries	UGA (PI: Dr. Joseph) will develop research-based management tools for ornamental nurseries to mitigate the attacks from redheaded flea beetle 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.	$70,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Georgia Department of Agriculture	$1,348,645.01	13. Aroniaberry: A New Fruit and Ornamental Specialty Crop for Georgia	The University of Georgia (Dr. Pennisi) will investigate the feasibility of Aronia as a new specialty crop for consumption and as an ornamental in Georgia. The project will use traditional breeding approach, field evaluations, combined with microscopic and nutraceutical analyses.	$90,000.00
Georgia Department of Agriculture	$1,348,645.01	14. Quality and Safety of Cabbage that is Subjected to Abusive Conditions	UGA (Dr. Tyl) will assess when cabbage, an important commodity in Georgia, is most susceptible to the effects of temperature abuse throughout the life of the product, and the magnitude of the changes caused by it.	$75,000.00
Georgia Department of Agriculture	$1,348,645.01	15. Vidalia Onions: The Sweet Life	The Vidalia Onion Committee will seek to highlight the unique characteristics of Georgia's state vegetable. We will achieve this by educating consumers, national grocery store retailers and farmers markets on the availability, versatility, flavor, provenance, and what makes a Vidalia onion the "premium sweet onion" among all other sweet onions. By doing so the Vidalia onion industry will be able to command a premium price at market, returning higher profits to the growers. The VOC will achieve these goals by launching its "Sweet Life" campaign through ad creative, paid media, influencer program and media outreach.	$75,000.00
Guam Department of Agriculture	$243,607.45	The Recovery, Production and Distribution of Staple Root Crops for Sustainable Agricultural Commodity as a Result of Crop Loss due to Ungulates	Collaborative efforts amongst 40 local root crop producers and the Guam Department of Agriculture in the production of staple root crops for a sustainable agriculture and as part of food security greatly strained by the destructive foraging of ungulates throughout the island. A trapping and control effort is being undertaken, however, previous efforts in the collection and propagation of various root crops for distribution has been greatly challenged by decreased availability of plant material needed in the effort to mass produce for distribution to local farmers thus to increase production and make available and affordable root crops at local markets that is fresh, not imported. Compilation of production schedules to reflect number of producer recipients of root crops, yields and value will be assessed at the end of the growing period. Collection of various types of root crops for nursery production and In-Vitro replication will greatly enhance the overall availability for seed stock distribution and increased production, a vital part of the island's food security and sustainability.	$221,297.46

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Hawaii Department of Agriculture	$496,660.53	1. Establishing an Avocado Orchard as Model for a Year-Round Harvest in Hawaii.	The University of Hawaii, in collaboration with local farmers, will establish a 15-acre avocado (Persea americana) orchard for a year-round harvest, with approximately 40 varieties which yield at different seasons (Avocado races, Guatemalan, Mexican, West Indian, and hybrids of different races, yield at different times of the year). The over-arching goal of this project is to increase and stabilize the local avocado production and bridge the gap (lack or low) of production seasonality (lowest production between June-Sept.), throughout the state. Expected outcomes of this project are: 1) to increase the local production of avocado; 2) bridge the gap of production (lack or low) in some seasons; 3) reduce the reliance on importing avocado or increased chances of exporting avocado; 4) provide more stable year-round labor; 5) Improving the economy, either by reducing imports or increasing exports.	$50,000.00
Hawaii Department of Agriculture	$496,660.53	2. Educating the Wedding Industry on Hawaiian Floriculture and How to Access It	The Hawaii Floriculture and Nursery Association will hold a series of Floral Design Workshops, Breeders & Growers Forums, and Nursery Tours dedicated to wedding industry professionals in order to educate them on the benefits of using Hawaii floriculture in wedding design and how to access the products. The workshops will showcase floral varieties distinctive to each island with professional floral designers giving demonstrations on how to create beautiful wedding flowers, such as bridal and attendant bouquets, table arrangements, and ceremony and reception décor.	$28,000.00
Hawaii Department of Agriculture	$496,660.53	3. A simple and low-cost DNA technique to identify hermaphrodite papaya seedlings	Hawaii Agriculture Research Center (HARC) will introduce and adopt a simple and low-cost DNA technique to help Hawaii papaya farmers to identify desired hermaphrodite papaya seedlings and help Hawaii's papaya industry recover more rapidly from the May 2018 natural disasters of a volcanic eruption and flooding on different islands. Currently field plantings start with multiple seedlings, e.g., 3 to 5 per planting hole, are maintained until trees flower at 5 months when holes are thinned to single hermaphrodites. Using the proposed simple and low-cost DNA technique, HARC could identify and discard female seedlings prior to field planting to save on the labor, cost, and space required for planting and thinning.	$39,910.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Hawaii Department of Agriculture	$496,660.53	4. Promoting cacao (Theobroma cacao) production in Hawaii through Ecosystem Sustainable and Integrated Pest Management (ES-IPM) approaches.	The University of Hawaii PEPS Department (Wang and Sipes) will promote and enhance cacao production in Hawaii by helping farmers to resolve key stumbling blocks. Based on stakeholder inputs, the project managers propose to conduct farm-scaping to 1) evaluate the impacts of soil cover, insect netting, and night lights on pests and pathogens; 2) improve soil and plant health by intercropping cacao with living mulch and shelterbelt tree as windbreak; and 3) promote ES-IPM farm-scaping system to cacao growers in Hawaii through statewide outreach events. The project managers will be redesigning cacao seedling protective gear against Chinese rose beetle and wind damage.	$35,000.00
Hawaii Department of Agriculture	$496,660.53	5. Statewide Expansion of Online Local Seed Marketplace to Increase Specialty Crop Seed Sales and Consumption	Hawaii Seed Growers Network (HSGN) will collaborate with University of Hawaii Cooperative Extension Service, Hawaii Island Seed Bank, The Kohala Center, GoFarm Hawaii, independent seed producers and agricultural stakeholder organizations across the State of Hawaii to enhance the competitiveness of specialty crops through production and sale of locally adapted seed varieties. The project will entail a marketing and outreach campaign with the aim of increasing sales of and market access points for specialty crop seeds cultivated by HSGN; develop 15 new specialty seed varieties; and continue building and coordinating the network of seed producers supplying seed for sale through the online marketplace.	$38,000.00
Hawaii Department of Agriculture	$496,660.53	6. Increasing the Competitiveness of Hawaii's Avocado Industry through Coordinated Supply and Marketing Strategies.	The Hawaii Farmers Union Foundation (HFUF), in partnership with the Hawaii Avocado Association (HAA), proposes a strategic approach to strengthen the local avocado industry. The market potential for farmers is exciting and the demand currently unmet. An estimated 70% of the 2 million avocados Hawaii imports could be substituted locally. Mainland and international markets, such as Canada, Japan, and Hong Kong are willing to pay premium prices and are either established or underway. To meet the demand for any of these markets, farmers will need to increase supply consistency, which will require a coordinated and cost-effective approach.	$35,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Hawaii Department of Agriculture	$496,660.53	7. Building Hawaii's Capacity for Produce Safety Education	The University of Hawaii at Mānoa, the land grant institution for the state of Hawaii, is responsible for providing science-based programs to support agriculture through Cooperative Extension. Cooperative Extension is the outreach component of the College of Tropical Agriculture and Human Resources that extends practical applications of science to support local food systems by providing non-formal science-based education to farmers and other parts of the communities. As such, Cooperative Extension forms partnerships within the agricultural community, industry associations, governmental agencies to accomplish this outreach component.	$35,000.00
Hawaii Department of Agriculture	$496,660.53	8. Assessing Dead-End Trap Crops for the Management of Diamondback Moths in Hawaii	The University of Hawaii at Manoa will suppress the growth of diamondback moth populations by developing scientifically based behavioral control methods, termed dead-end trap cropping, which can be deployed on conventional and organic farms. Dead-end trap cropping is a method of luring pests to lay eggs on plants that do not support the development of their offspring. Results and developed methods will be disseminated to stakeholders though grower meetings, field days and educational online videos.	$35,000.00
Hawaii Department of Agriculture	$496,660.53	9. Assessing Olive fruit fly control strategies in Hawaii	The University of Hawaii at Manoa will assess scientifically based strategies to control olive fruit fly (OLF) populations in Hawaii and consequently decrease OLF damage on olive. Results and developed control strategies will be disseminated to stakeholders though grower meetings, field days, CTAHR extension publications and educational online videos.	$35,000.00
Hawaii Department of Agriculture	$496,660.53	10. Introduce erythrina gall wasp resistant tall wiliwili, Erythrina variegatea 'Tropic Coral' for use as windbreaks	The College of Tropical Agriculture and Human Resources (CTAHR) will propagate, increase and introduce three clones of gall wasp resistant tall wiliwili, Erythrina variegata 'Tropic Coral'. CTAHR has already created gall wasp resistant forms of the tall wiliwili. The task now is to propagate, increase and distribute them to nurseries, farms and ranches statewide. The return of this important windbreak plant will result in increased yield, reduced inputs, increased efficiency, increased economic return, and conservation of resources.	$32,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Hawaii Department of Agriculture	$496,660.53	11. Evaluation and Promotion of Heat Tolerant Protea Cultivars to Increase Statewide Grower Adoption	Pincushion Protea, Leucospermum, is a pocket-market flower grown on the islands of Hawaii. Demand is high for protea, but production is low due to previous inabilities to grow at lower elevations. Several heat tolerant cultivars have been screened over the last 10+ years and are suitable to growing at low elevation. The applicant organization is University of Hawaii, CTAHR, lead Russell Galanti. Protea will be mass produced and tested for heat tolerance at two new sites. The mass-produced protea will be supplied to industry members on event days. Field days and workshops will be held statewide for interested stakeholders in the floriculture and nursery industries. Results from trials, and trainings on how to grow protea will be the subject.	$20,672.00
Hawaii Department of Agriculture	$496,660.53	12. The Hawaii Superfoods Project will showcase Hawaii specialty crops that possess exceptional nutrient density.	The North Shore Economic Vitality Partnership (North Shore EVP) proposes the Hawaii Superfoods Project to increase access and awareness of Hawaii specialty crops throughout the state by educating the public on the availability of Hawaii specialty crops that possess exceptional nutritional value through informative campaigns, recipe card creation and distribution, and social media engagement.	$30,000.00
Hawaii Department of Agriculture	$496,660.53	13. Increasing Specialty Crop Growers' Share of the Food Dollar through Kahumana's Community Supported Agriculture Program	The State of Hawaii imports approximately 90% of food consumed and is dangerously reliant on imported foods; Hawaii Governor Ige set a goal of doubling local food production by 2020. More locally grown foods will contribute greatly to Hawaii's economy while providing the best quality food for customers. Hawaii's farmers have started to respond to the self-sufficiency challenge; half of all farmers participate in some form of direct to consumer sales.	$40,460.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Idaho State Department of Agriculture	$2,033,776.00	1. Evaluation of the spatial variability of E. coli in irrigation canals for the FDA Produce Safety Rule	This project will enhance the competitiveness of Idaho specialty crops by assessing the spatiotemporal variability of E. coli in irrigation canals in southern Idaho. Project deliverables include a sampling protocol that will allow irrigators to comply with the new Food & Drug Administration (FDA) Food Safety Modernization Act Produce Safety Rule. Water sampling will occur at 40 points of diversion (POD) from irrigation canals to farms that have average annual sales over $500,000. In addition to quantifying E. coli we will also measure dissolved oxygen, temperature and total suspended solids at PODs to determine if other, more easily made measurements can be used to flag times and locations that are potentially problematic. Analysis of the water quality data will be done in an open-source coding platform and made publicly available through an R shiny application so that individual farmers may enter their data to quantify values needed to report to the FDA (geometric mean (GM), and statistical threshold (ST)).	$107,376.00
Idaho State Department of Agriculture	$2,033,776.00	2. Collect and Identify Pollinators That Enhance Idaho Specialty Crops	We believe that at the conclusion of our grant project we will be able to say: a. Working through the College of Idaho, and with students and citizen scientists trained in the collection, identification, along with the biology, floral preference, and seasonality of our native pollinators in order to educate our producers of specialty crops on how to promote pollinator growth and sustainability b. We hope to determine viable technologies/processes that would in turn support the identified native pollinators and their habitats to increase their presence which will enhance specialty crop production c. We will provide education about the native pollinators and how to support them through science-based practices and tools. Our information and knowledge will be shared with outreach and education programs presented in the following manner: print, online access as well as seminars, workshops, bee friendly farming certifications, pesticide certification programs and display of specimens at the Orma J Smith Museum of Natural History located on the College of Idaho campus.	$86,709.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Idaho State Department of Agriculture	$2,033,776.00	3. Building Awareness, Demand, and Increasing Sales of Idaho Apples through Media and Retail Promotions	The proposal "Building Awareness, Demand and Increasing Sales of Idaho Apples through Media and Retail Promotions", outlines a project that will be conducted by the Idaho Apple Commission. The goal will be to work with local retailers to build demand for Idaho Apples, and build strong relationships with those retailers. The project includes a marketing program necessary to help the Idaho retailers increase sales, and to build awareness of Idaho Apples, on a local and national level. The program builds consumer awareness to encourage consumer purchases of Idaho Apples. Candi Fitch, Executive Director, Idaho Apple Commission, will be in charge of the project oversight. She will work with the Idaho Apple Commissioners, industry members, and representatives of the Idaho retailers to make sure the project is completed in the time allowed and that the end results achieved are in the best interest of all parties involved.	$64,900.00
Idaho State Department of Agriculture	$2,033,776.00	4. Short Tree Architectures for Pedestrian Apple Orchards to Improve Yield, Quality, Nutrients, and Labor Cost	The Idaho Apple Commission will establish an agreement with the University of Idaho Pomology Program to study the feasibility of converting tall trees into a short pedestrian high-density apple orchard in which the top of trees can be reached from the ground level without using a ladder. Our previous research revealed that the use of a Tall Spindle (TS) and Central Leader (CL) training systems in high-density apple orchards increased precocity and yield. However, trees in these systems were too tall and fruit produced on the top of these trees were hard to reach, and thus had poor quality. Cultural practices such as pruning, thinning and harvesting of trees with TS and CL systems require mechanical equipment, and ladders which are expensive. Labour constitutes nearly 50% of the costs in apple production and a major portion of workers time is spent on moving ladders that may cause accidental fall, costing major legal challenges to growers. Pedestrin orchards do not require ladders, and cultural practices can be conducted from the ground level.	$150,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Idaho State Department of Agriculture	$2,033,776.00	5. Developing rapid molecular diagnostic tests for bacterial diseases of Phaseolus and Non-Phaseolus bean species	The Idaho Bean Commission through the University of Idaho and the ISDA Plant Pathology lab will develop and validate new molecular diagnostic tests for bacterial diseases of beans. This will include tests for Xanthomonas (axonopodis) campestris pv. phaseoli/X. fuscans subsp. fuscans (causal agents of common blight), Pseudomonas syringae pv. syringae (brown spot), Pseudomonas (savastanoi) syringae pv. phaseolicola (halo blight) and Curtobacterium flaccumfaciens pv. flaccumfaciens (bacterial wilt). These bacterial pathogens can cause yield losses of up to 100% in severe disease outbreaks. Also, in order to maintain Idaho's reputation for high quality bean seed, these bacteria are regulated pathogens in Idaho.	$89,007.00
Idaho State Department of Agriculture	$2,033,776.00	6. Increasing Sales and Building Awareness of Idaho Cherries through In-store Promotions and Social Media	The proposal "Increasing Sales and Building Awareness of Idaho Cherries through In-store Promotions and Social Media" outlines a project that will be conducted by the Idaho Cherry Commission. The two-year project goal will be to work with local retailers to build demand for Idaho Cherries, and to build strong relationships with those retailers. The project will include an extensive Social Media program and in-store tasting demos as well as advertising in a trade publication early spring to let buyers know when Idaho cherries are available. The above-mentioned activities are to help increase sales of Idaho Cherries, and build Idaho Cherry identity with consumers, local retailers, and within the distribution chains.	$22,200.00
Idaho State Department of Agriculture	$2,033,776.00	7. Developing integrated disease management strategies for pink root disease of onions	The Idaho-Eastern Oregon Onion Committee (IEOOC) through a contractual relationship with the University of Idaho and Oregon State University will develop new integrated disease management strategies for pink root disease in onions. Pink root, caused by the soil-borne fungus Setophoma terrestris, is the most important disease of onions in the Treasure Valley and is present in at least 85% of onion fields. It is capable of causing disease losses of up to 50% although yield losses of 10 to 20% are common. Presently few options other than fumigation are available to growers. Fumigation is expensive and there are concerns it is detrimental to soil health.	$133,774.50

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Idaho State Department of Agriculture	$2,033,776.00	8. Increasing Awareness and Sales of Idaho-E. Oregon Onions in International and Domestic Markets	The proposal "Increasing Awareness and Sales of Idaho-E. Oregon Onions in International and Domestic Markets", outlines a project that will be conducted by the Idaho-Eastern Oregon Onion Committee (IEOOC). The IEOOC feels that it is important to continually stay in front of International and Domestic buyers and consumers, as well as foodservice professionals. Continued education for these industry segments of Idaho and Eastern Oregon Onions in regard to the benefits, versatility, and availability is vital. With the import and export markets continually changing it is important to look for new markets and to build on existing markets.	$111,637.00
Idaho State Department of Agriculture	$2,033,776.00	9. Developing Knowledge and Creating Awareness for Idaho Hops through Summer Tours, Social Media, and Newsletters	The proposal "Developing Knowledge and Creating Awareness for Idaho Hops through Summer Tours, Social Media, and Newsletters" outlines a project that will be conducted by the Idaho Hop Growers Commission (Commission). The two-year project will include an enhanced Social Media program, and further implementation of the quarterly newsletter. Still photography will be acquired during the stages of growth to harvest. The Commission feels that educating consumers and brewers about where hops are grown, and the availability and the quality of Idaho hops is important. The local Summer Tours outlined in this grant during the two years of the project will serve perfectly to continue to build awareness and offer education.	$39,800.00
Idaho State Department of Agriculture	$2,033,776.00	10. Domestication, propagation, and commercialization of new-generation native plant products for the Idaho nursery industry	This project will provide two economically impactful outputs: 1) new and superior, water-conserving native plant products for markets associated with the Idaho landscape nursery industry, and 2) plant propagation protocols for new native plant products to enhance success related to marketing and delivery. Four research objectives will frame native plant product development: 1) acquisition of new native plant germplasm, 2) critical evaluation of native plant accessions, 3) selection of superior native plants with commercial product potential, and 4) production of seed and propagules and transfer of market-ready native plant products to industry partners.	$134,716.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Idaho State Department of Agriculture	$2,033,776.00	11. United Kingdom Dehydrated Potato Growth Program	The Idaho Potato Commission (IPC) will establish Retail sampling programs in the United Kingdom. These programs will increase dehydrated potato exports to the United Kingdom. Sampling and other marketing programs and activities will be developed to increase consumer awareness of the dehydrated products coming from Idaho. The project will be overseen by Ross Johnson, Director of International for the IPC.	$130,000.00
Idaho State Department of Agriculture	$2,033,776.00	12. Marketing Idaho Specialty Crops through Idaho Preferred Advertising, Social Media, Public Relations and Retail Promotions.	Idaho Preferred®, a program within the Market Development Division of the Idaho State Department of Agriculture, will continue its successful promotion of specialty crops through digital advertising, social media, public relations and retail promotions in 2021 and 2022. 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. Additional in-store demos will start earlier in the summer to add in additional specialty crops starting in late June. Social media will help promote the tour and events as well as increase consumer awareness of seasonal specialty crops. This project will build on and expand similar successful projects funded in 2016, 2017, 2018 and 2019. As a result of this three-prong promotion, sales of fresh produce will increase by $1. 5 million over 2019 data.	$164,031.72
Idaho State Department of Agriculture	$2,033,776.00	13. Field trials for an automated early season potato virus Y (PVY) detection system	Idaho State University (ISU) researchers will focus on refining an accurate and scalable system using Unmanned Aircraft Systems (UAS) equipped with a specialized sensor to detect and map individual Potato Virus Y (PVY) infected plants within potato seed-producing agro-ecosystems. ISU was the first University in the state of Idaho to secure authorization from the Federal Aviation Administration (FAA) to conduct UAS flights. We currently have a blanket Certificate of Authorization to fly in any class G airspace under 400 ft. Our prior efforts and research results in accuracies of 90 percent or better using a machine learning classifier approach to identify PVY in the field, a significant improvement over current industry practices. Anticipated results are dramatic reductions in grower dependency on pesticide control, fertilizer, water, fuel, and equipment inputs and improve yields	$97,803.16

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			and quality of potato seed stock for both seed growers and commercial potato producers.	
Idaho State Department of Agriculture	$2,033,776.00	14. Why Idaho? – Improving perception and encouraging growth	The Idaho Grape Growers and Wine Producers Commission (IWC), led by Executive Director, Moya Dolsby, is committed to helping growers and winemakers in the state of Idaho produce the best quality wine in the region. Dolsby will continue to guide all project elements associated with advancing the industry. The wine industry in Idaho is increasing in size, quality, and recognition, and is a growing economic sector in Idaho. However, reputation and brand awareness remain two of the largest constraints on growth. In an effort to showcase the high quality and value of Idaho wines the IWC is preparing to launch a new advertising and marketing program centered on answering the question – "Why Idaho?" The purpose of this campaign is to create positive product differentiation amongst a very competitive landscape of wine producers.	$190,820.00
Idaho State Department of Agriculture	$2,033,776.00	15. Development of a fruit harvesting robot prototype: OrBot (Orchard Robot)	The Robotics Vision Lab of Northwest Nazarene University (NNU) will develop a fruit harvesting robot prototype called the Orchard Robot or "OrBot". The OrBot robot prototype will be composed of a machine vision system, a 6 degrees-of-freedom manipulator (robotic arm), a gripper, and a control system. The machine vision system will be a unique combination of a color camera and a depth sensor, which will be used to recognize and locate fruit position. A machine vision algorithm will be developed to recognize and locate the fruits under dynamic, complex, and unstructured environment in the orchard. Once the target fruit is located, the control system will direct the manipulator towards the fruit and the gripper picks the fruit from the tree. The	$131,784.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			control system will be responsible for the eye and hand coordination using a customized visual-servo control.	
Idaho State Department of Agriculture	$2,033,776.00	16. Increasing Efficiency and Economic Return of Specialty Crop Seeds through Improved Technology for Seed Cleaning and Germination Testing.	The Snake River Seed Cooperative (SRSC) will increase the efficiency and economic return of specialty crop seed production, by acquiring upgraded tools for seed cleaning and germination testing, enabling 34 Idaho producers to continue to meet the growing demand for sustainably grown and regionally adapted seed. SRSC will train growers in the use of these tools and collect and disseminate data related to the benefits of the technology upgrade. Thirty new seed varieties will be added to SRSC's collection as a result of better seed cleaning and germination technology.	$10,136.00
Idaho State Department of Agriculture	$2,033,776.00	17. Developing sophisticated disease surveillance methods to safeguard potato soil health in Idaho.	Idaho is the leading potato producing state with about 13.4. billion cwt of potatoes in 2019. Pathogens are a constant threat to potatoes resulting in quantitative and qualitative losses. Soil-borne diseases threaten yield and profit for potato production and management can account for greater than 10% of production costs. Researchers at the University of Idaho propose to develop pathogen detection tests using a bulk soil \ extraction method for the recovery of both RNA and DNA for a wide range of pathogens (fungi, bacteria and viruses) as well as developing field validation data. Our focus will be the development of a detection assay for Spongospora/PMTV as this is an emerging problem for potato production in Idaho as well as Rhizoctonia and Colletotrichum, persistent soilborne problems for potato production.	$138,839.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Illinois Department of Agriculture	$591,473.30	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. 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.	$26,330.00
Illinois Department of Agriculture	$591,473.30	Create and promote a digital platform that links motivated plant buyers to garden centers and growers	The Illinois Green Industry Association (IGIA) will create a digital platform to serve as a tool where motivated buyers can connect with the high-quality plant material they seek, ultimately linking them to a local producer in their community where they can complete the purchase. The first phase of the project will be focused on the Illinois consumer. We will redesign the gardenillinois.com website to enhance the educational offering, focused on the physical, emotional, environmental, and economic benefits of plants; offer a plant finder tool that will help connect consumers with plants that meet their individual needs; and ultimately link the motivated buyer with a local retail garden center, nursery, or greenhouse in their community that offers the plants they seek. The second phase of the project will focus on the wholesale customer; linking landscape professionals, municipalities, garden centers, and growers in other states looking to purchase high quality plant material from Illinois nursery producers that service the wholesale market. As part of the project, a targeted marketing campaign will be conducted to drive traffic to the online platform to boost sales of plant material in Illinois. This digital platform will stabilize the future viability of Illinois' nursery and garden center industry, increase the long-term sustainability of Illinois growers, expand the sales of nursery stock at the local retail level and cultivate the public's interest and commitment to install more green goods, specifically locally grown trees, flowers and shrubs, in their own landscapes.	$88,672.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Illinois Department of Agriculture	$591,473.30	Educational Support, Outreach, and Marketing for Illinois Specialty Crops	The Illinois Specialty Growers Association (ISGA) will offer educational opportunities for specialty crop farmers with educational programs at the annual Illinois Specialty Crop Conference and additional workshops and webinars throughout the 2021 year. 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, work to ensure specialty crop farms are in compliance with FSMA Produce Rule.	$81,618.00
Illinois Department of Agriculture	$591,473.30	Engaging Consumers with Woody Perennials and Specialty Crop Production to Increase Access, Knowledge, and Consumption	The Land Connection (TLC) will increase knowledge and consumption of Illinois specialty crops by engaging consumers with woody perennials, a less readily available specialty crop, and home production. To accomplish this goal, The Land Connection proposes a project to grow the number of Illinois specialty crop cards available, increase and diversify the types of resources that are available on Illinois specialty crops, and build a robust outreach campaign to ensure a larger population of individuals in our state know about the card series and online resource portal. The activities in this project include expanding the Illinois Specialty Crop Card Series, developed by The Land Connection in 2018, to include 30 “How to Grow” cards and 15 woody perennial cards. TLC will also develop 26 videos related to home specialty crop production and woody perennials. These videos will be posted in the Illinois Specialty Crop Resource Portal developed by The Land Connection in 2019. Finally, this project will include 6 free to the public cooking classes on cooking with woody perennials.	$51,689.31

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Illinois Department of Agriculture	$591,473.30	Expanding training and evolving farmers market best practices in producer-to-consumer local food systems	The Illinois Farmers Market Association (ILFMA) will conduct a series of regional, statewide training for new, beginning, socially disadvantaged, existing farmers, specialty crop producers, and market managers. The series will focus on professional development and training in post-pandemic producer-to-consumer local food systems. The training will empower Illinois farmers markets - including market managers and market vendors - to become more efficient and effective in their market-day coordination, sales techniques, marketing efforts, food access programs, sanitation, food handling, and improved food safety, evolving best practices, and other tools for creating sustainable farmers market businesses to promote and sell Illinois specialty crops. Furthermore, ILFMA will continue to expand access to consumers seeking Illinois farmers markets, specialty crops, and agricultural products through the addition of searchable map features for farmers markets, producers, and products on the ILFMA website.	$76,550.00
Illinois Department of Agriculture	$591,473.30	Good Practices for Growing in Chicago Program Expansion	AUA's Good Practices for Growing in Chicago program expansion will provide increased technical assistance designed to support Chicagoland farmers in implementing good agricultural practices (GAP) that foster more sustainable businesses development for urban farm specialty crop producers. This expanded technical assistance will be supported by the development of a 10-member farmer council and a series of technical assistance videos. This program expansion will support over 100 farmers and 50 farm businesses operating in Chicagoland and outcomes will be evaluated through one on one conversations, online evaluations, and farmer focus groups.	$35,000.00
Illinois Department of Agriculture	$591,473.30	Improving urban youth garden training program through marketing, mechanical, and environmental operation upgrades	The Freeport High School Student Garden, Greenhouse, and Orchard is a student-run specialty crop business that produces and sells over 50 kinds of vegetables, herbs, and fruits.	$10,164.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Illinois Department of Agriculture	$591,473.30	Organic Specialty Lettuce Production to Increase Diversified Revenues for Small Growers	This project will determine the suitability and economic value for producing organic specialty lettuce in high tunnels for early spring local Illinois markets. Our proposed research study and outreach programs will give small scale vegetable growers in Illinois some indication of the production potential and revenues associated with organic butterhead lettuce production in high tunnels. This will be based on our proposed research studies involving butterhead lettuce variety and density evaluations in a high tunnel environment during the late winter-early spring growing environment. Results from the project will be disseminated to stakeholders through presentations, printed materials, and personal contact at various grower meetings throughout the state, as well as by placing a video describing results of the project in an online format for Illinois growers to access at any time.	$21,943.00
Illinois Department of Agriculture	$591,473.30	Predictive modeling to minimize the risk of microbial growth associated with fresh strawberries	The Southern Illinois University will minimize risk of microbial pathogens in fresh strawberries by developing a predictive model for microbial growth in different stages of strawberry production, handling, treatment, storage, transportation, retail sale and consumption. Microbial models will be developed based on microbial growth models in strawberry in different handling situations and the model will be validated from 3 years data collected at different stages of supply chain of strawberries in Illinois. Based on the validated model, strawberry handling guidelines will be prepared in the form of a fact sheet available at the SIU and Illinois Extension websites. Research results will be disseminated at the Specialty Crops conference and Gateway Small Fruits conferences. Impact studies will be conducted by pre and post project activity surveys of strawberry growers in Illinois.	$117,562.00
Illinois Department of Agriculture	$591,473.30	Specialty Crop Education & Consumer Awareness through Illinois Agriculture in the Classroom: Pumpkin 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 Pumpkins provides a positive introduction to agriculture, specialty crops, and the farmers who grow them, by using a popular subject	$12,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			matter that captures students interest and meets learning standards for teachers. Pumpkin Farms throughout Illinois who engage consumers can also benefit from access to this free educational resource.	
Indiana State Department of Agriculture	$478,813.70	Project 1 - Illiana Watermelon Association: Marketing and Consumer Education Campaign to Promote Indiana Grown Watermelon	The Illiana Watermelon Association requests funds to raise awareness of the Indiana watermelon industry and educate consumers on the health benefits and versatility of Indiana grown watermelon. Through geo-track marketing, social media marketing, and setting up booths at community events, the Illiana Watermelon Association will be able to educate consumers on the health benefits of Indiana grown watermelon and drive consumption. By effectively relaying the health benefits of Indiana grown watermelon to consumers, the Illiana Watermelon Association will promote healthy, sustainable eating habits while helping to continue the growth of agribusiness in Indiana.	$26,560.00
Indiana State Department of Agriculture	$478,813.70	Project 2 - Indiana Grown: Promotional Marketing for Indiana Farmer's Markets	Indiana Grown will develop and implement an organizational marketing plan to assist the market masters to increase sales and consumption of specialty crops at farmer's markets through marketing strategies and training opportunities. A marketing plan will be developed to address the needs of the market masters to address the needs of the producers and to educate the stakeholders and consumers about the benefits of farmer's markets. The market campaign will also target potential first-time shoppers and new growers to increase the number of farmer's markets across Indiana. The goal of this project is to work with Indiana farmer's markets to build demand for local produce, build a strong relationship between the producers and consumers, and increase sales in the local markets.	$63,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Indiana State Department of Agriculture	$478,813.70	Project 3 -Indiana Tree Nuts: Building Supply Chains for Indiana Grown Chestnut, Hazelnut, Pecan and Walnut	Indiana University will identify the steps needed to establish an Indiana-based supply chain for Indiana Grown chestnuts, hazelnuts, pecans and walnuts by conducting a supply chain assessment and hosting grower education workshops. Nut trees produce very well in Indiana, both cultivated in orchards and wild in forests. Breeders are developing improved varieties for Indiana, more landowners are raising nuts, and consumer demand for nuts is high. Our focus will be on the feasibility of building Indiana's nut aggregation and processing capacity, to increase the amount of value created by Indiana Grown nuts. Research activities will collect data from producers, aggregators, processors, food manufacturers, and other buyers through questionnaires, interviews, and observation. Educational activities will present conference workshops for growers, potential growers, and processors with representatives we will bring to Indiana from neighboring states' tree nut supply chains.	$76,810.00
Indiana State Department of Agriculture	$478,813.70	Project 4 - Hand Hygiene Verification using Video Analytics	Purdue University will design, build, implement, and evaluate an automated hand-hygiene verification observation system that uses automated video analytics to monitor and verify that food handlers have thoroughly and effectively washed their hands. The system will consist of commercially available cameras, a low-cost laptop computer, and a video analytics algorithm designed to verify that the necessary steps of hand-hygiene have occurred in the proper order and for a sufficiently long time. The video analytics algorithm will be designed and evaluated to ensure that it is effective across the range of environments encountered in a typical Indiana post-harvest processing facility. Purdue University will disseminate the basic concept to the stakeholders through grower meetings, Good Agricultural Practices (GAPs) grower trainings offered by Purdue Extension, and field days that are held yearly at the Purdue Agriculture Centers (PACs) located throughout Indiana. In addition, Purdue University will disseminate the methodology to the appropriate technical communities.	$170,717.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Indiana State Department of Agriculture	$478,813.70	Project 5 - Developing best management practices for the Asiatic garden beetle in commercial mint production	The Asiatic garden beetle (Maladera castanea), hereafter AGB, is a small beetle that attacks more than 100 different plant species, including ornamentals, weedy species, and crop plants. Adult beetles feed on flowers and foliage, but the most severe damage is inflicted by the larval (white grub) stage, which feeds underground on plant roots for nearly 10 months of the year. Feeding damage can lead to water stress, reductions in crop growth and yield, and even plant death. The goals of this project are to: (1) establish flexible economic thresholds for AGB in commercial mint fields, (2) evaluate insecticide efficacy against AGB grubs in mint, and (3) develop a self-sufficient extension program to support grower efforts to manage AGB in Indiana mint production systems. Upon completion, these objectives will contribute to the development and implementation of best management practices for AGB in Indiana mint.	$55,366.00
Indiana State Department of Agriculture	$478,813.70	Project 6 - Virtual and Interactive on-farm Education Program for Fruit & Vegetable Farmers	Purdue University will develop this virtual and interactive on-farm manufacturing education program for Hoosier fruit and vegetable farmers. A growing number of fruit and vegetable farmers start on-farm manufacturing to turn produce into value-added food products with an intention of increasing profitability and decreasing produce waste. Many produce farmers lack necessary processing knowledge and food safety management awareness. This project aims to develop a virtual and interactive food safety education program for Hoosier produce farmers to help them better understand the regulations and provide guidelines for various on-farm manufacturing. Effectiveness of this education program will be evaluated via surveys and be used to further improve the program. Train-the-trainer program will also be developed for regulators and extension educators to help them better communicate with farmers about the on-farm manufacturing. Our ultimate goal is to develop this virtual and interactive on-farm manufacturing education program for Hoosier produce farmers to produce more wholesome and safe value-added products and to thrive with an increased profit and income.	$55,959.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Iowa Department of Agriculture and Land Stewardship	$350,093.69	Choose Iowa – Specialty Crops Count	The Iowa Department of Agriculture and Land Stewardship will help boost sales of Iowa specialty crops by launching a Choose Iowa marketing campaign and distributing marketing kits for specialty crop producers. The effort will increase producer access to marketing materials, support consumer awareness of local food sources, and highlight stories of specialty crop producers stepping up to meet nutrition needs in their communities throughout the fight against COVID-19 and beyond.	$37,800.00
Iowa Department of Agriculture and Land Stewardship	$350,093.69	Choose Local: A Social Media and Video Campaign to Educate and Empower Iowa's Consumers	Iowa Valley RC&D will launch the Choose Local social media campaign with seven high-quality videos that highlight the ways that consumers can access local products directly from Iowa producers. Iowa Valley Resource Conservation and Development (IVRCD) in collaboration with a professional videographer, as well as partnering farms, farmers markets, and tourism staff, proposes a 30-month project to: 1) Produce seven high-quality Choose Local videos, 2) Launch the Choose Local social media campaign, 3) Educate Iowa consumers on how to purchase local products from direct-market farmers, and 4) Present and market the Choose Local social media campaign to Iowa tourism and economic development representatives.	$24,000.00
Iowa Department of Agriculture and Land Stewardship	$350,093.69	Cooperative Development and Demonstration of No-Till Vegetable Production in Iowans	Rodale Institute Midwest Organic Center located in Marion, IA will conduct research in collaboration with Practical Farmers of Iowa farmer cooperators to understand the potential for permanent bed, no-till vegetable production to advance soil health, improve crop yields, and mitigate weed pressure while communicating results with specialty crop growers through field days and presentations at regional conferences. Working alongside farmer cooperators as research leaders, the project will concentrate on practical on-farm approaches and focus on sharing information among specialty crop growers through formal and informal education channels. The proposed research has the potential to significantly change crop production in Iowa by identifying challenges and benefits created by using a permanent bed, no-till vegetable production system. A long-term goal of the partnership between the RI-MOC and PFI is to work with additional partner organizations and farmer cooperators to develop a	$23,713.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			multi-year study to further understand and improve no-till vegetable production for specialty crop growers in Iowa.	
Iowa Department of Agriculture and Land Stewardship	$350,093.69	Cultivating Knowledge and Shared Experience for Low-Till Vegetable Production in Iowa	Since 1985, Practical Farmers of Iowa and our members have specialized in farmer-to-farmer knowledge sharing to build more ecologically- and financially sustainable farms. Our farmers are asking for opportunities to learn more about low-till vegetable production. The work proposed in this grant will jump-start farmer-to-farmer knowledge sharing through a low-till intensive track during the PFI annual conference. The sessions during this "deep dive" will be led by farmers and researchers using no-till and low-till on their farms. We anticipate 25% of the ~900 conference attendees will be specialty crop producers. Over the two days of the conference, 225 producers will attend the low-till sessions. Hundreds more will visit the open-access materials and video from the conference online following the event. PFI's tasks during this grant will be to work with our farmer members to find and select the best farmers and researchers to invite as presenters, design, organize and publicize the conference, help manage logistics for speakers, facilitate and manage all aspects of the low-till track during the conference, and record and disseminate materials following the conference.	$23,997.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Iowa Department of Agriculture and Land Stewardship	$350,093.69	Enhancing Local Food Procurement and Education in Iowa SNAP-Ed Schools	Iowa State University Extension and Outreach Farm, Food, and Enterprise Development Program will create 9 Pick a Better Snack (PABS) lessons focused on Iowa specialty crops. These lessons will be informed by local farmer input and implemented by at least 13 PABS contractors, which will increase knowledge and intent to access specialty crops in 100% of participating contractors; expand local specialty crop procurement and education in 13 Iowa school districts through partnerships with Iowa specialty crop producers; and increase the knowledge of eating specialty crops in 15,900 participating students.	$23,961.00
Iowa Department of Agriculture and Land Stewardship	$350,093.69	Expanding and Diversifying Local Production of Specialty Crops via Increased Awareness, Education and Sales	The Iowa Food Cooperative (IFC) serves as a product sales and marketing conduit between specialty crop producers, small farmers, small businesses, and local consumers. We are distinct from traditional local food producer farmers' market models in that we use a year-round online marketing/local pick-up system. Recent management and system upgrades (introduction of a UPC payment system for our in-house products, online payment options, website upgrade, an in-depth organizational update) have positioned us to take on both more producers and more consumers. This project will help facilitate that opportunity. The end result of this SCPGP project will be increased specialty food production and sales for both existing and new Iowa small farm operations. We will accomplish this specialty crop production and sales expansion using 3 distinct approaches: 1. Increasing awareness of specialty crops and their availability via IFC (advertisements, promotions and displays) 2. Increasing access to IFC (more distributions sites) 3. Increasing the range of specialty crops products available (increase number of specialty crop producers and range of products produced).	$22,740.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Iowa Department of Agriculture and Land Stewardship	$350,093.69	Increasing Consumption of Specialty Crops Among Low-Income Iowans	The Iowa Healthiest State Initiative will increase knowledge, purchasing, and consumption of specialty crops among low-income Iowans utilizing SNAP (Supplemental Nutrition Assistance Program) by increasing awareness and participation in the Double Up Food Bucks fruit and vegetable incentive program. This project will use targeted consumer marketing strategies to engage SNAP households to participate in the Double Up Food Bucks program and thus increase sales of specialty crops at participating farmers markets and grocery stores. The DUFB program provides a 1:1 match on SNAP spending, up to $10 per day. For example; If SNAP shopper spends $7 in SNAP benefits at a participating farmer's market, they will earn an additional $7 of Double Up Food Bucks to spend on more fresh fruits and vegetables. This project is projected to increase DUFB redemption on fresh fruits and vegetables by 150% resulting in over $230,000 of DUFB incentive redemption by SNAP shoppers.	$24,000.00
Iowa Department of Agriculture and Land Stewardship	$350,093.69	Iowa Specialty Producers Conference	Last year the Iowa Department of Agriculture and Land Stewardship received a grant to help support the Iowa Specialty Producers Conference. The specialty crop industry was at an impasse. Annual conferences were poorly attended and the sustainability questionable. A group of individuals from the specialty crop industry approached us and asked for assistance in revitalizing a specialty crops conference that would put Iowa on the map as a place where specialty crop producers could network and gain invaluable knowledge to move their businesses forward. A partnership was formed, and representatives of the Iowa Fruit and Vegetable Growers Association and the Iowa Wine Growers Association worked with representatives of the Iowa Department of Agriculture and Land Stewardship to begin planning a combined annual conference. The conference was titled Iowa Specialty Producers Conference and the event exceeded our expectations. The Iowa Department of Agriculture and Land Stewardship would like to build off of the success last year and again support this conference.	$27,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Iowa Department of Agriculture and Land Stewardship	$350,093.69	Iowa Wine Country: Creating a Regional Wine Identity Based on Locally Grown Varietals	The Iowa Wine Growers Association (IWGA) will work to establish a regional wine identity for Iowa through the design and oversight of a comprehensive advertising campaign, passport/rewards program, educational materials and participation in tradeshows and events to ultimately expose new consumers to Iowa wines being produced from locally grown grapes. Work will be contracted with an advertising to create and place outdoor ads directing visitors off the interstates toward winery locations, a video series featuring Iowa wines and grape varietals, as well as a collection of promotional materials including a Passport program. IWGA staff time will be spent overseeing the campaign, working closely with wineries and vineyards on educational opportunities to utilize these materials to improve their own marketing efforts, and representing Iowa wines at various regional tasting opportunities, tradeshows and other industry-related events to educate both consumers and industry members outside the state.	$21,000.00
Iowa Department of Agriculture and Land Stewardship	$350,093.69	Promoting the Use of Lavender through Educational Outreach	The Iowa Agriculture Literacy Foundation will increase awareness and understanding of lavender as a specialty crop in Iowa through the development of lesson plans and hands-on activities for educators and students. The lessons and activities will include lavender production, honeybees as pollinators, and feature lavender products like lip balm, lotions, honey, and other food items. The lessons will be used by Loess Hills Agriculture in the Classroom and other organizations across the state. The hands-on activities will be demonstrated at community and school events like STEM festivals. They will include samples of lavender products including food items for learners to try.	$10,966.00
Iowa Department of Agriculture and Land Stewardship	$350,093.69	Strengthening Our Local Food System through Our Food Hubs	The Iowa Department of Agriculture and Land Stewardship (IDALS) will work with Iowa food hubs and the Iowa Food Hub Managers Working Group to strengthen our food hubs and increase consumers' access to healthy, locally grown produce in our state. This project has analyzed the needs of food hubs in the current, changing marketplace and will support this market through offering supplies, assistance with delivery to new customers and promotion of specialty crops.	$31,320.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Iowa Department of Agriculture and Land Stewardship	$350,093.69	Valorization of Cold-Hardy Grape Pomace	Grape is the largest fruit crop produced in the US estimated at 7.36 million tons in 2017. About 75% of grape is utilized for wine making which generates 25% of total grape weight as pomace, which is commonly used as a compost or spread out in vineyards. The goal of this project is to add a value to this waste. The department of Food Science and Human Nutrition at Iowa State University will optimize a sustainable drying method of cold-hardy grape pomace and produce microbiologically safe and stable grape pomace flour that contains polyphenols with antioxidant properties. This will be beneficial to the wine industry from Iowa by the transformation of their pomace into flour. The grape pomace will be dried using energy efficient natural gas catalytic infrared dryer. The flour will be characterized for the microbiological stability, polyphenol content and its antioxidant properties in order to be used by the wine and food industry or consumers for baking. The findings will be disseminated to the Iowa wine industry through articles and seminars and will be presented to the Iowa Specialty Producers Conference.	$23,194.00
Kansas Department of Agriculture	$331,973.58	1. Increasing specialty crops in prepared foods and retail sales at Prairieland Market	Prairieland Market (licensed under Prairieland Food Cooperative, Inc.) is a food cooperative with a retail store, CSA program, and in-house prepared foods (soups, stews, casseroles, and snacks). It seeks to expand its programs to increase specialty crop use, distribution, and sales. The Market offers a range of specialty crops year-round from more than 12 local growers. Prepared foods, made by volunteers in a rented commercial kitchen using organic ingredients and locally grown food, has grown in popularity to the point that demand often exceeds supply. This project will focus on increasing the supply of prepared foods while increasing the amount of local specialty crops used as ingredients in the various offerings.	$42,655.00
Kansas Department of Agriculture	$331,973.58	2. Promoting Specialty Crops in South Central Kansas through the Growing Growers Learning Network	The Extension Education Foundation, Inc will increase the number of successful specialty crop producers growing fruits and vegetables for direct market sales in south central Kansas and will increase the awareness of and access to locally produced specialty crops. This will be done through collaboration with county Extension agents, K-State Research & Extension specialists, local non-profits, and other area partners to develop and re-envision the Growing Growers program into	$68,312.03

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			a Growing Growers Learning Network (GGLN). This re-envisioned program will still focus on providing quality learning experiences for new, beginning, and socially disadvantaged producers, related to recommended production practices, best food safety practices, and developing sustainable businesses in regionally appropriate ways.	
Kansas Department of Agriculture	$331,973.58	3. Building capacity for education and research opportunities at Kansas State University's Willow Lake Student Farm	Kansas State University will establish its Willow Lake Student Farm as the premier small- to mid-scale, diversified farm research and training center in the Midwest by creating two "outdoor classrooms", extending wireless internet access to the fields, establishing mixed-monoculture and polyculture ("food forest") orchards, retrofitting an existing shed for mushroom research and production training, installing signage with educational information, expanding the tool library, and updating the produce wash station.	$55,692.00
Kansas Department of Agriculture	$331,973.58	4. Specialty Crop Conference Education Support	Specialty crops continue to be 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 and organic production and marketing. There will also be sessions covering a diversity of general interest topics, including food safety and labor.	$35,732.13
Kansas Department of Agriculture	$331,973.58	5. Growing and Sustaining the Kansas Specialty Crop Growers Association	The purpose of this project is to build on the successes of the 2018 SCBGP "Growing the Vegetable Producers Community With a Specialty Crop Growers Association" submitted by Kansas State University. The Kansas Specialty Crop Growers Association (KSCGA) was officially created in January 2019. Membership has grown steadily, and the association seeks to expand and strengthen its support of specialty crop growers in Kansas. A 2019 survey of Kansas specialty crop growers indicated their top three needs as: increased communication avenues to connect producers, more education geared towards specialty crop producers (especially in regard to marketing), and more opportunities for producers to network with one another.	$61,744.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Kansas Department of Agriculture	$331,973.58	6. Fresh Food Matters	Children First (lead), Elderslie Farm, and St. Patrick Catholic School, will partner to create the "Fresh Food Matters" to impact 8,055 individuals who live in Sedgwick County, to include: For 200 low-income students to increase their knowledge of eating more specialty crops through experiential learning in the St. Patrick teaching kitchen, including monthly classes by Chef Katharine Elders, Elderslie Farm and others, managed by the Children First Education VISTA. 755 low-income students from four education gardens (one established and three new) will understand growing and harvesting specialty crops with guidance from the Education Garden Manager and AmeriCorps members.	$55,995.00
Kentucky Department of Agriculture	$323,187.29	1. Defining Best Production Methods for Quality Sparkling Wine and Cider	The University of Kentucky will conduct winemaking experiments using apples and grapes specifically adapted to the climate of Kentucky to define best production methods for quality sparkling wine and cider. In addition to research on wine and cider production methods, plant performance will also be recorded from a recently planted cider-specific apple orchard at the UK Horticulture Research Farm. Results from all experiments will be used by University of Kentucky Extension Specialists to make recommendations to current and future sparkling wine producers of Kentucky through site visits, grower meetings, and field days.	$31,000.00
Kentucky Department of Agriculture	$323,187.29	2. Kentucky's Organic Specialty Crops: Increasing Grower Competitiveness and Consumer Demand	The Organic Association of Kentucky (OAK) will provide multi-year educational, technical assistance and marketing programming that builds on successful efforts to increase the number of specialty crop producers transitioning to organic, expanding existing organic operations and adopting best practices in organic production. Additionally, the project will deliver marketing and consumer education to increase consumer awareness of Kentucky grown, organic specialty crops and their intention to purchase, resulting in increased sales for participating farmers.	$57,276.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Kentucky Department of Agriculture	$323,187.29	3. A remedy for insect and bird pests: Fine-mesh netting canopies for use in direct to market and you-pick berries	A multi-disciplinary team of researchers in the Departments of Entomology (Gonthier) and Agricultural Economics (Woods) at the University of Kentucky will evaluate an alternative pest control practice that simultaneously deters birds, scarab beetle pests, and Spotted-wing Drosophila in four small- to mid-sized blackberry operations. The project will assess the pest control potential and economic profitability of installing canopy-scale fine-mesh exclusion netting (ExcludeNet with mesh holes 0.85mm by 1.40mm) compared to organic and conventional insecticide treated controls. This netting has advantages over traditional exclusion materials, such as heat dissipation, high strength, longevity, and water permeability. Our preliminary research shows that this netting reduces birds, scarab beetles, SWD, and other pests in blackberry and blueberry.	$49,972.00
Kentucky Department of Agriculture	$323,187.29	4. Salad for All-Seasons: Building Capacity for Year-Round Leafy Green Production in Kentucky	The University of Kentucky will build the capacity of vegetable crop producers to plan for continued, year-round harvest of leafy greens through development of crop growth modeling decision tools and case study analysis of the farm-to-institution leafy green value chain. This interdisciplinary project will include research on a network of farms in central Kentucky, including the UK Horticulture Research farm and leading leafy green producers in nearby counties. The data collected on these four farms, over two years of year-round production will generate data that will be used to create grower-friendly crop growth modeling decision tools for 10 leafy greens and other “salad bar” specialty crops.	$44,738.00
Kentucky Department of Agriculture	$323,187.29	5. Adding value to Kentucky Wines: Creation of the Kentucky Wine Technical Group	KWTG will be to improve winemaking competency of Kentucky vintners and help develop unity in message and wine quality among the diverse wine producers throughout the state of Kentucky. To achieve this, the Kentucky Wine Technical Group will promote the development and standardization of unique Kentucky wine styles through discussions, workshops and educational trainings (tasting panels). In addition, researchers and industry partners will conduct controlled wine experiments to trial novel yeasts with the potential to enhance the uniqueness of Kentucky wines. Technical winemaking information and scientific findings from the KWTG will be disseminated using several platforms to ensure a wide audience base is reached, including	$53,740.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			extension publications, conference presentations, informative handouts, and published on a newly developed web-portal.	
Kentucky Department of Agriculture	$323,187.29	6. Production of High-Value Pharmaceuticals by Cultivation of Artemisia annua L (Sweet Wormwood).	The University of Kentucky's College of Agriculture, Food, and Environment's Kentucky Tobacco Research and Development Center is seeking funding in collaborations with the Kentucky Department of Agriculture for a pilot project to optimize Artemisia annua L. (sweet wormwood) production practices. Sweet wormwood is a medicinal herb native to Southeast Asia and has been used in traditional Eastern medicine for a millennium. Select metabolites produced in sweet wormwood leaf (artemisinin and dihydroartemisinin) are direct precursors to the number one malaria medicine used worldwide – artesunate. Artemisinin and dihydroartemisinin have also demonstrated favorable outcomes when used to treat human diseases, including several different types of cancer. The rise in sweet wormwood interest has prompted stakeholders to look at Kentucky for sweet wormwood production.	$55,200.00
Kentucky Department of Agriculture	$323,187.29	7. KY State Fair Vegetable Room Upgrades	This project if awarded will be able to leverage the entire Kentucky Department of Agriculture. This grant will be able to partner with multiple programs of within KDA, i.e., Ky Proud, Farmers Markets, Organics, Produce Safety, etc., to create a space at the state fair for commercial growers compete and receive recognition for their production. Through awards to farmers and to farmers markets at the largest agricultural gathering in the state, an increased awareness by consumers will be achieved, and marketing tools will be gained by the grower.	$16,805.92

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Louisiana Department of Agriculture and Forestry	$413,908.19	Assess the efficacy of antimicrobial properties of a turmeric extract-loaded nano-emulsion in reducing pathogen loads	The goal of this project is to assess the efficacy of applying a food grade nano-emulsion containing turmeric (Curcuma longa) (NET), a natural antimicrobial agent, to cantaloupes in reducing pathogen loads. Pathogenic bacteria presence is expected in fresh produce because they can be contaminated from pathogenic bacteria in irrigation water and from wildlife. Pathogenic bacteria can be fatal to people who have depressed immune systems or underlying health conditions. Produce, particularly when consumed raw, can transfer pathogens to the consumer.	$47,522.00
Louisiana Department of Agriculture and Forestry	$413,908.19	Enhancing Food Safety Awareness and Market Opportunities of Specialty Crop Producers through Good Agricultural Practices	The LSU AgCenter will promote educational programs for the adoption of on-farm food safety practices that will assist producers in managing risk and regulatory changes. Targeting small farmers, packers and processors, Good Agricultural Practices (GAPs) and Good Handling Practices (GHPs) programs will be offered around the state. Topics include food safety, water quality, manure management, worker health, sanitation, animal management, handling practices and food safety regulations.	$75,550.00
Louisiana Department of Agriculture and Forestry	$413,908.19	Evaluating Organic-Based Fertilizers and Herbicides for Louisiana Lawns	Research and extension personnel at the LSU Agricultural Center will evaluate the use of organic fertilizers and herbicides to improve sustainability in establishment and maintenance of lawn grasses. Results will be disseminated to those in the landscape industry through a trade publication, at field days, and annual conferences.	$40,000.00
Louisiana Department of Agriculture and Forestry	$413,908.19	Evaluation of a plant-based antimicrobial formulation on control of damping-off and other diseases in vegetable seedlings.	The Louisiana State University Agricultural Center will evaluate and determine the efficacy of a plant-based antimicrobial formulation on preventing and managing damping-off in vegetable seedlings transplants in Louisiana.	$32,086.00
Louisiana Department of Agriculture and Forestry	$413,908.19	Louisiana Container Grown Citrus: Developing Best Practices to Support an Industry	The Louisiana State University Agricultural Center will investigate the potential of growing containerized citrus crops for fresh fruit in Louisiana. Nationwide there is a current trend in increasing sustainability and efficiency in specialty crop production. Specialty crops are shifting from traditional field production to containers due to diminishing availability of fumigants, increasing pest pressure, and the need for flexible and efficient production practices.	$26,264.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Louisiana Department of Agriculture and Forestry	$413,908.19	Soil health benefits of non-fumigant nematicides in sweet potato production in Louisiana	Louisiana State University will determine the benefit of non-fumigant nematicides on biological aspects of soil health in comparison to conventional soil fumigation in sweet potato production in Louisiana using a combination of field trials, soil suppressiveness bioassays, and nematode community analysis. Results will be disseminated to industry stakeholders through grower meetings and field days.	$39,990.04
Louisiana Department of Agriculture and Forestry	$413,908.19	To Develop an Effective Management Program for Fireblight and Rust Diseases in Mayhaw Production.	Louisiana Mayhaw Association (LMA) and the Louisiana State University Agricultural Center (LSU AgCenter) will collaborate to develop an effective management program for fireblight and rust diseases in mayhaw production. Mayhaw diseases including, fireblight caused by Erwinia amylovora and quince rust caused by Gymnosporangium clavipes, present major obstacles in mayhaw production and may cause significant yield loss, if left untreated.	$44,500.00
Louisiana Department of Agriculture and Forestry	$413,908.19	Water Testing and Management to Help Specialty Crop Growers to Meet Federal and Market-driven Requirements	Louisiana Department of Agriculture and Forestry (LDAF) in partnership with LSU Agricultural Center (LSUAC) will assist 200 fruit and vegetable growers in Louisiana in improving the safety of their commodities by providing: (1) education on the importance of safe use of agricultural water in growing, harvesting and handling fresh produce, (2) 200 water analysis testing kits to educational program participants, (3) free water analysis and (4) technical assistance in the form of recommendations to the producer for needed agricultural water quality mitigation practices.	$59,370.00
Maine Department of Agriculture, Conservation, and Forestry	$598,034.60	Enhanced IPM practices for control of diseases in Maine wild blueberry	This University of Maine project, supported by the Wild Blueberry Commission of Maine (WBCM), will continue to develop new methods of pathogen detection and control and implement those methods in an Integrated Pest Management program for diseases. 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.	$79,994.00
Maine Department of Agriculture,	$598,034.60	Expanding Maine's Fresh Vegetable Market Through Improved Winter Squash Storage	The University of Maine will carry out a survey of commercial winter squash growing operations to determine the cause of poor storage life of this crop. Research at the Maine Agricultural and Forest Experiment Station will evaluate potential pre- and post-harvest treatments of	$14,595.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Conservation, and Forestry			winter squash, including curing and surface sanitizing techniques to improve post-harvest quality and prolong storage life. Improving winter squash storage life will allow farmers to significantly extend their market season into the fall and winter months, when cash flow is typically very slow.	
Maine Department of Agriculture, Conservation, and Forestry	$598,034.60	Expanding Maine's Berry Industry to Improve Farm Profitability	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 preforming plants for Maine growing conditions and could result in significant improvements in current fruit quality and yield standards, which will allow Maine farmers to successfully expand fresh berry production and meet the growing demand for locally produced fruit.	$30,872.00
Maine Department of Agriculture, Conservation, and Forestry	$598,034.60	Expanding on Daybreak Growers Alliance’s wholesale aggregation, marketing and distribution model for Maine Specialty Grown Crops.	Daybreak Growers Alliance will expand upon its existing wholesale program with the aid of a second year of SCBG funding support. In its first year, Daybreak Growers Alliance is on track to realize its goal of $126,000 in Maine grown specialty crop sales. In its second year, Daybreak Growers Alliance’s wholesale program will increase that sales goal by 50% to realize $189,000 in specialty crop sales. This increase will reflect a 50% increase in sales for DGA’s specialty crop farm partners, directly facilitating sales growth for 30+ Maine specialty crop farmers.	$38,216.00
Maine Department of Agriculture, Conservation, and Forestry	$598,034.60	Increasing the Sales and Price of Maine Pure Maple Syrup	The Maine Maple Producers Association will expand its marketing efforts by further developing its educational and marketing outreach to consumers and by enhancing its communications to maple producers in Maine so that marketing is amplified by producers sharing the professionally developed marketing strategies with their local and regional customers.	$22,500.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Maine Department of Agriculture, Conservation, and Forestry	$598,034.60	Maine Potato IPM - 2021	Without reliable and sustainable pest management strategies, Maine's $500 million potato industry faces the potential for severe crop losses resulting in significant reductions in profits and threats to long-term viability. To ensure an adequate response to the pest-related hazards confronting potato growers, the University of Maine Cooperative Extension Potato Integrated Pest Management (IPM) Program will provide support through field monitoring, disease forecasting, and distribution of educational materials.	$83,321.00
Maine Department of Agriculture, Conservation, and Forestry	$598,034.60	Maine Produce Safety Improvement Project	The Maine Organic Farmers and Gardeners Association will enhance the competitiveness of specialty crops and increase the number of farms able to come into compliance with the Food Safety Modernization Act (FSMA) Produce Safety Rule and/or a GAP/GHP audit by providing food safety educational, financial, and one-on one technical assistance resources to Maine farmers.	$64,956.00
Maine Department of Agriculture, Conservation, and Forestry	$598,034.60	Peach Variety Testing and Development for a Local Market	The University of Maine at Highmoor Farm will evaluate strategies for reducing the risk of producing peaches. We will test 20 new peach varieties for climactic adaptation and suitability to the local market, and will develop new peach varieties with improved cold hardiness using traditional breeding methods. We will also systematically compare sites in Maine for yield and tree survival to develop planting recommendations for growers. This work will be conducted on behalf of Maine's fruit growers who will be informed of the results and progress.	$52,402.00
Maine Department of Agriculture, Conservation, and Forestry	$598,034.60	Pilot to encourage GAP/GHP certification for growers of eligible specialty crops in Maine	The Division of Quality Assurance and Regulations, 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% 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.	$12,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Maine Department of Agriculture, Conservation, and Forestry	$598,034.60	The Millennial Opportunity: Expanding Supply, Demand, and Infrastructure for a New Era of Maine Wild Blueberry Sparkling Wine	Bluet, creator of Maine's first nationally viable wild blueberry sparkling wine, will work with a wide range of stakeholders over the next three years to: 1) lead unique marketing, distribution and production efforts to define, claim and promote a new Maine wild blueberry beverage category for the Millennial-driven 21st century market; 2) expand and deepen grower and producer participation in this market through production, education, and outreach, and 3) begin building the Maine wild blueberry wine industry infrastructure needed to drive global market access, foster a new generation of local winemakers, and champion best practices and policies that sustain growers, producers, and a thriving Maine wild blueberry wine industry.	$62,800.00
Maine Department of Agriculture, Conservation, and Forestry	$598,034.60	Using Foliar Fertilizers and Soil Amendments to Improve Wild Blueberry Production and Resilience to Warming	On behalf of Maine's wild blueberry farmers, the University of Maine proposes this project titled Using Foliar Fertilizers and Soil Amendments to Improve Wild Blueberry Production and Resilience to Warming. We propose to continue our grant from 2020 into 2021. In 2020, we evaluated new fertilizers for their efficacy, impact on pest presence, yield, berry quality, and cost to the farmer. We also began evaluating blueberry growth under three temperature regimes that mimic climate warming. Based on our research to date, foliar calcium and plant growth regulators merit further study. We also found that wild blueberry plants grown at 3 to 5ºC above ambient temperatures had an extended growth period yet less available soil water and nutrients due to increased water loss under warming.	$84,647.00
Maryland Department of Agriculture	$443,020.03	Project 1 - Grow and Fortify – "From the Ground to the Glass: Using Technology to Connect Consumers with Craft Beverages"	Grow & Fortify will work with a professional app development company to create a free-to-use app that connects residents and visitors with the Maryland craft beverage community. The purpose of the app is to highlight the farms and craft beverage operations, encourage and evaluate specialty crop agritourism in Maryland, and create greater awareness of this important sector of the agricultural economy. Grow & Fortify will also develop resources, in the form of an online training, and checklist template, for other producer organizations who might want to consider an app for their industries. Apps are an important tool that can be easily disseminated to the public through a variety of marketing efforts and campaigns. This effort will educate residents and tourists about specialty crops as both a raw agricultural ingredient, as	$80,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			well as the value-added processing that creates an economically important, and delicious, final product.	
Maryland Department of Agriculture	$443,020.03	Project 2 - 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 continue providing coordinated food safety programs based on research, lessons learned from previous projects and updates to GAP and Produce Safety Rule standards to assist specialty crop producers in complying with the Food Safety Modernization Act Produce Safety Rule and maintaining/gaining market access. Programs will include in person and online 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.	$100,315.37
Maryland Department of Agriculture	$443,020.03	Project 3 - Maryland's Best – Promoting Specialty Crops to Maryland Consumers, Distributors	Maryland Department of Agriculture's Agriculture and Seafood Marketing Section will promote local specialty crops to consumers and distributors through advertising, the web site www.marylandsbest.net, Maryland Public Television, business to business meetings and point of sale promotional material. Maryland specialty crop producers compete against worldwide suppliers of specialty crops. This project will build upon existing State assets to distinguish local products from the competition to consumers and distributors. MDA intends in the COVID recovery period to maintain consumer's awareness of available Maryland-grown specialty crops and increase their consumption.	$160,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Maryland Department of Agriculture	$443,020.03	Project 4 - Let's Cut the Rug: Investigating Food Safe Alternative Materials for Watermelon Post-Harvest Activities	The University of Maryland will enhance safety of watermelon post-harvest practices by evaluating and optimizing use of alternative materials for absorbent harvesting and hauling surfaces, disseminating results through scientific publications and best practices guides presented at statewide stakeholder meetings. This project will evaluate the benefits, opportunities, and challenges of implementing closed cell foam or food grade rubber in watermelon harvesting activities. The persistence of foodborne pathogens, optimal cleaning and sanitizing approaches, and the effect of installing this material on fruit quality will be evaluated at the University of Maryland Wye Research and Education center and on collaborating farms.	$30,000.00
Maryland Department of Agriculture	$443,020.03	Project 5 - Improving Fruit Quality of Economically Important Apple Cultivars Grown in Maryland Using Reflective Groundcovers	University of Maryland researchers in partnership with Maryland apple growers will evaluate the use of reflective groundcovers to improve apple skin color, overall fruit quality, whole tree yield and light distribution within the canopy of the commercially grown and economically important Honeycrisp apple cultivar. These features will be assessed at different stages of Honeycrisp apple fruit ripening and two canopy levels. Findings from this study will be used to provide apple growers critical information and recommendations that will allow them to increase the value and marketability of their crop that can lead to greater profits. Knowledge gained will be disseminated to apple growers and other stakeholders via extension meetings and conferences, field day tours, newsletters, web postings and other outreach venues. We anticipate the future adoption of reflective groundcovers will help local apple growers improve the profitability of their orchards. It is anticipated that this technology will be transferable to other specialty crop systems.	$30,000.00
Massachusetts Department of Agricultural Resources	$453,834.57	1. A More Diverse Harvest: Strengthening the Supply Chain of Specialty Crops Used in Massachusetts Schools	In this project Massachusetts Farm to School will expand the successful Harvest of the Month program to support schools to source, serve, and promote a greater variety and volume of local specialty crops. The project will focus on strengthening the role of local food hubs in distributing Harvest of the Month crops and providing specialty crops that support schools in serving culturally relevant meals.	$53,647.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Massachusetts Department of Agricultural Resources	$453,834.57	2. Growing HIP Access: Expanding Markets for the Healthy Incentives Program through Pre-Orders	The Regional Environmental Council's Mobile Market will increase access points for SNAP recipients to purchase local produce through the Healthy Incentives Program by developing a model for online pre-orders with scheduled delivery and/or pickup. We will promote this additional access point and provide customer education via our existing Mobile Market and through a series of Pilot Mobile Markets over the course of the grant period.	$62,736.60
Massachusetts Department of Agricultural Resources	$453,834.57	3. Accelerating Soil Health Through Compaction Mitigation: a Data-Supported Peer-to-Peer Farmer Learning Project	NOFA/Mass (Massachusetts Chapter of the Northeast Organic Farming Association) will work with Massachusetts farmers to better understand how compaction in their farm fields impacts growing specialty crops (in this case, mixed vegetables), and how compaction impacts yield and farm profitability. We will focus on farmers who are working on reducing tillage. Farmers interested in soil health are adopting tillage reduction measures, but don't always understand underlying existing soil structural issues from prior management. There is not currently a strong understanding among farmers of the persistence of compaction, or of the relative capacity of different tools to mitigate the issue. Complicating this factor, it is commonly believed in the Massachusetts farming community that sandy soils are immune to compaction, which impacts awareness and monitoring of soil structural issues. This project will support seven farmers who are attempting to reduce tillage to better understand both their baseline soil density and to assess change over time.	$86,311.00
Massachusetts Department of Agricultural Resources	$453,834.57	4. Analyzing pesticide levels in MA honey, and assessing possible routes of exposure to improve recommendations for MA honey producers	A previous UMass study (funded by MDAR) found that 100% of wax samples and 98% of pollen samples in MA were contaminated with pesticides, including the beekeeper-applied miticide coumaphos, which is no longer used due to mite resistance and bee toxicity. MA honey producers consistently asked the same questions when shown these results: "Does this mean my honey is contaminated?" and "Where is the coumaphos coming from?" In order to answer these questions and provide concrete recommendations to MA honey producers who want to sell a safe product, UMass Amherst will: 1) gather 50 honey samples from beekeepers around the state and test them for pesticides, and 2) purchase wax foundation from four bee supply companies and test them for pesticides.	$35,229.76

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Massachusetts Department of Agricultural Resources	$453,834.57	5. Enhancing the Sustainability and Resiliency of Garlic Production in Massachusetts	The University of Massachusetts Amherst will work with local vegetable growers to introduce a sustainable garlic production system to the Northeast. The proposed system is designed to enhance the sustainability and resiliency of garlic production by building natural soil fertility, increasing biodiversity, and minimizing the need for off-farm inputs. Garlic will be relay-cropped into four standing fall planted cover crop treatments including oat, field peas, forage radish, and a mixture of all three species. At the time of planting garlic will be inoculated with arbuscular mycorrhizal (AM) fungi, which has the potential to increase garlic water and nutrient (especially phosphorous) uptake efficiency and speed up cover crop residue decomposition in the spring.	$59,322.76
Massachusetts Department of Agricultural Resources	$453,834.57	6. Development of three public domain specialty crop cultivars for organic agriculture in Massachusetts.	Freed Seed Federation will develop three new, open pollinated, specialty crop cultivars utilizing a Participatory Plant Breeding model involving farmers and professional plant breeders. These will be better adapted to low-input, organic agricultural practices in Massachusetts than those currently available through commercial seed markets. These new varieties will reduce farm dependence on fungicide and fertilizer inputs and the time and money spent on their application. The proposed unique new cultivars will also have high market appeal and, when added to a farm's cropping system, have the potential to boost farm revenue.	$83,455.00
Massachusetts Department of Agricultural Resources	$453,834.57	7. Revive and Thrive Specialty Crop Business Program	The Sustainable Business Network of Massachusetts (SBN)'s 2020-2021 Revive and Thrive Specialty Crop Business Program will continue to build upon the success of the previous program. The 2020-2021 Revive and Thrive Specialty Crop Business Program aims to reduce barriers to specialty crop integration by building connections between producers and institutional food buyers, bolstering the demand for specialty crops, and supporting the overall profitability, variability, and sustainability of specialty crop producers.	$36,607.77

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 1 - International Marketing Program – MDARD - International and Domestic Promotion of Michigan Specialty Crops	The Michigan Department of Agriculture & Rural Development's (MDARD) International Marketing Program will continue collaborative work with the Cherry Marketing Institute, Michigan Bean Commission, Michigan Apple Committee, and the Michigan Potato Industry Commission to promote specialty crops both domestically and internationally. New specialty crop commodity groups joining the program will include the Michigan Asparagus Advisory Council and the Michigan Blueberry Commission. 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 domestic and 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 and there is additional competition in the domestic market. The International Marketing Program will work to secure booth space at various trade shows, recruit and assist with organizing 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 mini grants to bring either domestic or international buyers to Michigan. The goal of all activities is to increase purchases of Michigan specialty crops and provide markets for producers	$154,096.48
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 2 - Optimization of Fertilizer Rate Recommendations for Michigan Dry Bean Growers: Strengthening Economic and Environmental Sustainability	The Michigan Bean Commission (MBC), which has demonstrated commitment to sound economic development and environmental stewardship, will be managing this project. This project is designed to provide optimized nutrient recommendations to ensure appropriate soil fertility required for enhanced crop productivity. This proposed project builds on two years (2019-2020 crop years) of research trials designed to establish rate recommendations under small-plot testing. It is appropriate to further assess, verify, and optimize these recommendations using extensive on-farm "Strip Trials." These large-scale trials are essential to validate recommendations under commercial conditions. Improvements in fertilizer management within	$99,998.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			this highly concentrated land space will have a significant impact on environmental quality.	
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 3 - Michigan Greenhouse Growers Council - Greenhouse Growers Seek Innovative Solutions to Control Botrytis Blight	This proposal, submitted by the Michigan Greenhouse Growers Council (MGGC), will reduce Botrytis blight and enhance plant quality by developing and extending novel strategies to control Botrytis blight, thereby reducing production costs associated with fungicides and increasing the industry's profits. The wholesale value of Michigan's floriculture crops was $475 million in 2018. Our goal is to reduce or prevent Botrytis blight and enhance plant quality. This will be achieved by determining whether photoperiodic lighting, including different light qualities (color), and/or calcium chloride sprays can reduce disease and growers' reliance on fungicides. Providing grower outreach regarding novel approaches to Botrytis blight management is an integral component of this project and ensures successful outcomes.	$70,000.00
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 4 - Evaluating Effective Management Strategies to Control Anthracnose Fruit Rot in Michigan Blueberries	The Michigan Blueberry Commission is requesting funding from the MDARD/USDA Specialty Crop Block Grant Program in collaboration with the Small Fruit and Hop Pathology Laboratory at Michigan State University. Michigan has a roughly $120 million blueberry industry and nearly 75% of the industry is planted to cultivars which are very susceptible to a fruit rot disease known as anthracnose (e.g. Jersey and Bluecrop) (USDA-NASS 2016). Anthracnose fruit rot (caused by the fungus Colletotrichum acutatum) is difficult for growers to manage and typically is controlled by prophylactic applications from bloom until harvest. The objectives of this proposal are to 1) re-assess fungicide products utilized to control anthracnose, 2) evaluate fungicide programs within the industry through grower surveys, 3) assess fungicide efficacy to several modes of action and 4) communicate the	$70,258.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			information to the industry through outreach efforts within Michigan State University.	
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 5 - Strategies are needed to protect Michigan's cucurbits from fungicide resistant downy mildew	The Michigan Vegetable Council has partnered with MSU researcher, Dr. Mary Hausbeck, to develop crop specific recommendations for the state's cucurbits (slicing and pickling cucumbers, pumpkins, squashes, cantaloupe, watermelon, and gourds) to combat the downy mildew pathogen (Pseudoperonospora cubensis) that has become resistant to key fungicides. Our overall goal is to develop fungicide programs that are specifically tailored to protect the major cucurbit crops grown in Michigan from downy mildew. This will be achieved through replicated fungicide trials which will identify effective and efficient programs that are tailored for each of the major cucurbit crops grown in Michigan. The anticipated outcomes from this project include a decrease in the risk and expense from downy mildew.	$91,577.00
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 6- Managing downy mildew in Michigan vineyards: investigating alternative products, fungicide efficacy and resistance levels	The Michigan State Horticultural Society is requesting funding from the MDARD/USDA Specialty Crop Block Grant Program in collaboration with the Small Fruit and Hop Pathology Laboratory at Michigan State University. This project focuses the most critical grape disease that Michigan's grape industries face, namely downy mildew. The proposed research will investigate a multi-faceted approach to control downy mildew for Michigan growers by 1) investigating alternative products (e.g. oils, synthetic fungicides and biofungicides), 2) re-assessing current fungicide efficacy and update extension materials and 3) examining resistance profiles to commonly used synthetic fungicides (namely QoIs and CAAs). This proposal will allow the researchers at Michigan State University to develop scientifically derived information that will be used to manage grapevine downy mildew and the results of this project will be disseminated by various annual Michigan State University outreach activities and grower focused field days throughout the state.	$99,500.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 7 - Development of Integrated Weed Control Program for Michigan Christmas Tree Production	The Michigan Christmas Tree Association, working with Michigan State University, is seeking funding to support research to help growers improve their productivity and profitability by developing an integrated weed control program. The principal objectives include, evaluating different combinations of postemergence (POST) herbicides, organic mulch, and their combinations on the natural weed populations and their phytotoxic effects on four species (Fraser fir, Scotch pine, Colorado blue spruce, and Douglas-fir) of Christmas trees during their establishment phase in a field trial followed by a separate weed control efficacy trial focusing on herbicide-resistant common ragweed species and to determine the most appropriate strategy for controlling weeds in Christmas tree production. The results and outcome of this research will be disseminated to the Christmas tree growers and stakeholders through field days, growers' meetings, and extension/outreach publications by Michigan State University.	$72,744.00
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 8 - Addressing priority issues in berry moth management for Michigan vineyards	National Grape Cooperative will partner with Michigan State University to conduct research and extension activities that will 1) improve management of grape berry moth and other insects affecting harvest quality and yield, and 2) reduce the need for broad spectrum insecticides applied to Michigan juice grape vineyards. This project addresses the high priority insect issues identified by members of the Michigan grape industry and will generate new information on the currently available tools for insect control. This information also needs to be delivered to growers so they can make informed decisions. To ensure this, our project will coordinate research and extension activities. We will bring grape growers together twice a year during this project to discuss the progress on the project and to use the information to develop proactive strategies for reducing insect damage.	$99,637.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 9 - Michigan celery growers seek answers to plant “meltdown” which threatens the industry’s future	Celery Research Inc. has partnered with MSU researchers to determine the cause of the destructive plant “meltdown”, a critical issue for Michigan’s $19.5 million industry, and develop an effective solution. Losses from plant death in the field and poor quality in the packing sheds reached a costly level in 2018 and 2019 prompting widespread concern. Growers have reported up to 65% plant loss. We propose to collect diseased celery samples from grower farms and identify the pathogen via molecular analysis. Our field studies will examine whether there is a link between production practices including herbicide use and cultivar selection with celery “meltdown”. It is only with this information that the celery industry can limit the significant economic risk that they currently face and enable the research required to develop effective and affordable management strategies.	$70,046.00
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 10 - Identification of Potato Varieties with Postharvest Disease Resistance	Michigan State University will improve potato storability and reduce costly storage losses by developing chip and table stock varieties that are resistant to postharvest diseases, including Fusarium dry rot, bacterial soft rot, Pythium leak, and pink rot. Potato pathology, breeding, and outreach programs will develop screening methodologies for use in early line, advanced germplasm, and commercial variety selection. Tuber resistance to major fungal (Fusarium spp.), bacterial (Pectobacterium and Dickeya spp.), and oomycete (Pythium and Phytophthora spp.) pathogens will be considered. The findings of this research will be disseminated to local, regional, and national stakeholders through extension and scientific meetings.	$85,625.00
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 11 - Integrated Approaches to Managing Cone Diseases in Michigan Hopyards	The Hop Growers of Michigan are requesting funding from the MDARD/USDA Specialty Crop Block Grant Program in collaboration with the Small Fruit and Hop Pathology Laboratory at Michigan State University. Michigan ranks 4th in overall hop production in the US with nearly 1,000 acres being grown in the state (USDA-NASS 2017 Statistical Report). Hops are an exciting crop for Michigan but there are challenges to growing them within the state due to the humid growing environment during summer. The primary pest within the state is downy mildew, which is primarily a foliar/shoot disease, but it can affect cone development. The objectives of this proposal are to: 1) sample hop yards that have a history of Diaporthe spp., 2) evaluate	$73,258.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			fungicide efficacy in controlling Diaporthe infections, 3) assess cultivars and time periods that are critical to Diaporthe infection and 4) communicate the information to the industry through outreach efforts with Michigan State University.	
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 12 - Multifaceted Strategies to Communicate the Value of Michigan Dry Beans: Conventional and Digital Educational Programs to Increase Bean C	The Michigan Bean Commission (MBC) has been chartered to enhance the production and consumer use of dry beans grown in the State of Michigan. The Michigan Bean Commission activities embrace the health, food, therapeutic, and dietetic value of beans and bean products; carry out market development, market research, and promotional programs. This project is designed to enhance consumer awareness through educating and engaging them directly regarding the health benefits of incorporating nutrient dense dry beans in their daily diet. This will be achieved through the implementation of multifaceted strategies to communicate and educate the value of Michigan dry beans. It is proposed that conventional and digital approaches (social media and web-based resources) designed for specialized educational programs be targeted to increase Michigan dry bean consumption. Beans clearly have a significant role among today's health-conscious consumers. Additional bean education and communication for consumers is a promising opportunity.	$107,200.00
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 13 - #1 Target Audience Engagement to Increase Sales of Michigan Apples	In 2018, the Michigan Apple Committee board approved its strategic plan for the period 2018 – 2023 and placed consumer awareness in the top three of its priorities. Significant emphasis was placed on strengthening consumer awareness and increasing market penetration of Michigan Apples. MAC aims to increase sales of Michigan Apples by leveraging online and direct outreach efforts. This grant is a top priority for the Michigan Apple Committee. The Michigan Apple Committee proposes to spend $125,000 on outreach to consumer and retail audiences that includes social media, advertising, and retail and school programs to increase competitiveness of Michigan Apples in the marketplace.	$125,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 14 - The Dinosaur in the Room: Sales & Marketing Tools to Prevent Extinction of Michigan Asparagus Industry	The Michigan Asparagus Advisory Board (MAAB) will contract with Full Tilt Marketing, a marketing agency that specializes in fresh produce marketing, for the purpose of growing fresh market demand through a focus on retail education and consumer marketing that work together to facilitate knowledge of the benefits of USA-grown Michigan Asparagus for both retail buyers and traditional supermarket consumers. For retail trade marketing we will utilize trade educational tools, promotional incentives, press releases, e-newsletters and the MAAB website to disseminate information related to recent research on asparagus category performance and consumer buying habits to retail buyers. On a consumer level we will utilize social food influencers to grow audience awareness of the attributes and benefits of Michigan asparagus, as well as promote the availability of a digital coupon that will be used to incent purchase. Additionally, we will highlight a Michigan centric asparagus brand “Bronto Spears” to bring attention to Michigan Asparagus in stores and media.	$125,000.00
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 15 - Publication of Instructional Manual for Operating a Five Acre Institutional Horticulture Farm Using an Incarcerated Labor Force	The Shiawassee County Sheriff’s Office will write and publish an instructional manual on how to operate a five-acre institutional horticulture farm using incarcerated labor to grow and distribute fresh local vegetables and bedding plants using conventional, sustainable, regenerative, and organic production methods in the field and greenhouse. Specific parts of the program will include training inmate workers for future employment by Michigan specialty crop growers, retailers, and food industry; reducing costs to government institutional kitchens; along with distributing fresh locally grown produce to food pantries, shelters, and distribution events that assist underserved and at risk populations in both urban and rural communities often located within fresh produce deserts. The instructional manual will be available online and a printed version will be distributed to sheriffs in all 83 counties of Michigan.	$125,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 16 - Driving Tart Cherry Demand with Influential Foodservice Operators	With the National Restaurant Association projecting overall restaurant sales will hit a new high of $863 billion, the Michigan tart cherry industry has an ideal opportunity to increase awareness and use of U.S. Montmorency tart cherries on menus across the country. By connecting with and inspiring established and next-generation menu decision makers to incorporate Michigan tart cherries into their menus through a partnership with the Culinary Institute of American (CIA), one of the most respected and influential culinary education programs, this opportunity can be realized. Through the CIA's ProChef Discovery Program partnership, the Cherry Marketing Institute (CMI) will expose up-and-coming culinary students and seasoned culinary professionals to the multitude of applications where tart cherries can enhance the flavor, texture, presentation and overall appeal of menu items. The CIA will develop ten content rich videos featuring on-trend tart cherry recipes, preparation techniques, product attributes, etc., specifically for foodservice operators.	$125,000.00
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 17 - A Comprehensive Marketing Project To Improve Competitiveness of Lake Michigan Shore Wines	Lake Michigan Shore Wine Trail (LMSWT) plans to increase consumer access to and awareness of Southwest Michigan wine through a comprehensive marketing project. Specific project activities include: (1) building one cohesive website that is user-friendly consumers to navigate and members to update; (2) designing, printing and distributing a promotional map of the Southwest Michigan AVA and Trail wineries; (3) hiring a professional writer to provide compelling written content for promotional print and web pieces; (4) hiring a film/media company to design and execute a promotional video to be presented on the new website and through social media marketing. The project impact will be measured through surveys to assess how these tools are engaging consumers. Surveys to member wineries will monitor changes in sales and the number of consumer visits to their facilities. The Trail will introduce their new website and promotional materials at annual events conducted by the Trail and other industry partners. Survey results will inform future marketing strategies and be available for member wineries and partnering organizations to use.	$88,252.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 18 - Debating Glyphosate, Understanding the Prominence of Herbicide Resistance and Residuals in Nurseries: Specialty Crops Matter!!	The Michigan Nursery and Landscape Association (MNLA) will study the effects of “non-target” drift, “target” applications, and herbicide persistence in MI nursery operations. This study utilizes the, Summary of Herbicide Site of Action (SoA) Classification List, Weed Science Society of America (WSSA, 2017). The four herbicide SoA’s considered at risk in nursery, due to their over-use include, Microtubule inhibitors (Group 3); 5-Enolpyruvyl-shikimate-3-phosphate (EPSP) Synthase inhibitor (Group 9) (Glyphosate); Synthetic auxins (Group 4); and Cellulose inhibitors (Group 20, 21 and 29). This “debate” provides a great opportunity to talk to nursery growers/ greenhouse managers/Christmas tree farmers, etc., about their need to rotate herbicides, not use the same products over and over, and become reliant on preemergence herbicides, not postemergence herbicide in specialty crops. Additionally, because growers have been using the same herbicides repeatedly, in preliminary studies, lingering soil residues of these over-used herbicides including, glyphosate, clopyralid and indaziflam have been found. The effects of these residues have never been studied on specialty crops.	$100,000.00
Michigan Department of Agriculture and Rural Development	$1,992,250.94	Project 19 - Cold Hardiness Monitoring for Grapevines in Southwest Michigan	The Michigan Grape Society, a non-profit grower organization, will partner with Michigan State University to monitor grapevine bud cold hardiness during the dormant season from grower-cooperators across southwest Michigan. This monitoring will consist of weekly measurements of10 or more grape varieties and disseminated through articles and/or the MSU extension website to inform growers of potential damage events. Ultimately, this information will also be used to provide local recommendations for site and cultivar suitability for future planting decisions.	$40,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Minnesota Department of Agriculture	$1,334,002.39	Project 1 - Statewide Promotion of Minnesota Grown Specialty Crops	This project, through the Marketing and Development Division of the Minnesota Department of Agriculture, increases sales of MN specialty crops through statewide marketing, including search engine advertising, promoted social media posts and social media advertising, and specialty crop advertising in the printed Minnesota Grown Directory. Minnesota Grown is the flagship statewide promotion program to stimulate demand for and sales of local food and plants. Since its founding by the state legislature in 1987, this public-private partnership has grown to include 1,341 producer members. Minnesota Department of Agriculture (MDA) staff manage the program, which includes: a robust online platform and directory, a printed directory, an extensive array of marketing materials for member farms and retailers, a limited amount of paid TV advertising across Minnesota, and public relations activities.	$98,348.48
Minnesota Department of Agriculture	$1,334,002.39	Project 2 - Protecting Minnesota's Christmas Tree Industry: The Potential Impact of the Elongate Hemlock Scale.	The exotic elongate hemlock scale (EHS) was found in Minnesota on imported Christmas trees in 2018 and 2019. Through a collaboration between the Minnesota Department of Agriculture and University of Minnesota, this project's purpose is to determine the potential of this insect to survive in Minnesota and its impact on this important specialty crop. The Minnesota Department of Agriculture (MDA) will establish a contractual agreement with Dr. Brian Aukema's forest entomology laboratory in the Department of Entomology at the University of Minnesota to complete the work of determining the cold hardiness of elongate hemlock scale (EHS). EHS is a tiny, invasive needle-feeding pest that infests Fraser fir (a popular Christmas tree) as well as other firs and spruces.	$92,972.00
Minnesota Department of Agriculture	$1,334,002.39	Project 3 - Screening for Black Rot Resistant/Tolerant Cultivars of Spring and Fall Broccoli	This project, by the Minnesota Fruit & Vegetable Growers Association, will screen for black rot (Xanthamonas campestris pv. campestris) resistant/tolerant cultivars of spring and fall broccoli to address the persistent black rot disease which has resulted in up to 90% yield loss for fresh market growers. We will also screen for Alternaria leaf spot, an emerging pathogen. There are very few tools available to manage this disease, making genetic resistance and tolerance key strategies for management.	$34,536.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Minnesota Department of Agriculture	$1,334,002.39	Project 4 - Produce Safety in Minnesota: Broadening Market Access for Growers and Increasing Local Produce Purchasing and Consumption in Schools	University of Minnesota Extension will provide GAPs education, materials, and technical assistance to Minnesota produce growers to reduce risks and increase market access to schools to increase local produce purchasing and consumption in farm-to-cafeteria and school garden programs. University of Minnesota Extension seeks to enhance produce safety and increase market access for MN specialty crop growers through Good Agricultural Practices (GAPs) and Food Safety Modernization Act (FSMA) Produce Safety Rule (PSR)-related workshops, technical assistance, and resources, including for beginning and socially disadvantaged farmers. We also aim to bring relevant GAPs and FSMA awareness, education, and materials to institutional audiences - particularly schools - to lessen confusion and misconceptions related to the safety of local produce, empower local purchasing, and reduce food safety concerns and risks in garden programs.	$100,000.00
Minnesota Department of Agriculture	$1,334,002.39	Project 5 - Produce Safety Rule Grower Training and Post-Training On-Farm Produce Safety Improvement Grants	The Minnesota Department of Agriculture will help produce growers understand the FSMA Produce Safety Rule by offering grower trainings at a reduced cost, and help growers implement on-farm food safety improvements through a mini-grant opportunity. The Minnesota Department of Agriculture Produce Safety Program (PSP) has worked directly with Minnesota produce growers for three years across the state, providing training, information about the Produce Safety Rule (PSR), on-farm visits to discuss food safety practices, and starting inspections in the summer of 2019. This work is part of the development of a new regulatory inspection program focused on the implementation of the PSR, one of seven new Federal regulations enacted under the Food Safety Modernization Act (FSMA).	$100,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Minnesota Department of Agriculture	$1,334,002.39	Project 6 - Expanding Deep Winter Greenhouse Production with Early Season Tomatoes	The University of Minnesota Extension's Regional Sustainable Development Partnership (RSDP) will lead and execute this project that seeks to expand the Deep Winter Greenhouses (DWG) production season by incorporating tomatoes for late spring/early summer markets. The project also includes a DWG tomato profitability analysis and outreach on DWG production. The University of Minnesota Extension's Regional Sustainable Development Partnership (RSDP) will lead and execute this project. This project will identify best practices for utilizing passive solar Deep Winter Greenhouses (DWGs) to grow tomatoes for late spring/early summer markets.	$100,000.00
Minnesota Department of Agriculture	$1,334,002.39	Project 7 - Training Immigrant Farmers on Growing Methods and Accessing New Markets for Ginger and Strawberries	This project by the Hmong American Farmers Association focuses on training small-scale, immigrant Hmong farmers on best practice growing methods for ginger and low tunnel day-neutral strawberries, increasing regional availability, and improving farmers' economic returns. A successful program will result in training 100 immigrant and first-generation Hmong farmers on best growing practices for ginger and strawberry production, and 12 Hmong farmers implementing a specialty crop growing program over the course of the two-year project. The project outcomes will lead to an increased in specialty crop producers, increase amounts of locally grown ginger and strawberries in the Twin Cities region, and improved earnings and income potential for participating HAFA farmer-members, and increased awareness of best practice growing methods for other potential specialty crop producers.	$98,445.60

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Minnesota Department of Agriculture	$1,334,002.39	Project 8 - Grass Weed Control with Abrasive Grit in Minnesota Horticultural Crops	West Central Research & Outreach Center through the University of Minnesota will execute this project to achieve grass weed control in orchards and vineyards without chemicals using high velocity abrasive grits derived from residues of Minnesota-based natural products. This project, by the University of Minnesota West Central Research & Outreach Center (WCROC), will advance new technology for controlling grassy weeds in specialty crops by comparing air-propelled hazelnut shell grit with grits derived from other Minnesota agricultural byproducts. Common agricultural residues, such as corn cobs, can be processed into abrasive grit. Our research team already has shown that these gritty materials can be propelled at high velocities to abrade and successfully control broadleaf weeds growing amongst valuable horticultural crops. However, corn cob grit is too “soft” to abrade and control grass weeds economically.	$81,490.00
Minnesota Department of Agriculture	$1,334,002.39	Project 9 - Genetic Improvement of Hybrid Grape Fruit Quality Traits	This project by the University of Minnesota-Twin Cities Grape Breeding and Enology project will use high-throughput techniques for measuring fruit quality combined with genetic mapping to improve the efficiency of developing new cold hardy hybrid grapes and improve production practices and sustainability for Minnesota farmers. This project, led by Dr. Matthew Clark in collaboration with Dr. Adrian Hegeman, aims to improve the techniques used to measure important grape fruit quality traits including color, flavor and aroma compounds (commonly called volatile organic compounds; VOCs). The UMN Grape Breeding project will benefit from improved methodologies for characterizing breeding germplasm and also for evaluating the impact of viticultural practices aimed to improve current cultivar production. Flavor and aroma profiles in hybrid grapes are different than common Vitis vinifera grapes produced in Mediterranean climates. For example, hybrid grapes have more complex colors, and include additional flavor compounds (some desirable and some undesirable) that make them unique. The goal of the breeding program is to efficiently and precisely characterize these attributes as well as use DNA tests to predict the performance of young plants on these traits in order to speed up the breeding cycle.	$99,929.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Minnesota Department of Agriculture	$1,334,002.39	Project 10 - Genomic Approaches for Improving Low-Input Turfgrass Sod	This project, conducted by the University of Minnesota, will use genomic approaches to improve a low input turfgrass species, strong creeping red fescue, for enhanced sod forming ability. Genetic markers from this project will be very useful in a molecular plant breeding program leading to new cultivars of fine fescues with enhanced sod-forming ability. We will communicate results to sod producers and other turfgrass managers both through in-person talks and articles in professional trade magazines such as the Minnesota Turf and Grounds "Clippings". For this study, we will focus on strong creeping red fescue and slender creeping red fescue as they are the only fine fescues that produce rhizomes which makes them more favorable for sod production. We will genotype 2000 strong creeping red fescue plants using the DaRTseq method, resulting in approximately 10,000 single nucleotide polymorphism (SNP) markers that can be used in a molecular breeding program.	$92,993.00
Minnesota Department of Agriculture	$1,334,002.39	Project 11 - Managing Mechanical and Biological Factors That Help Spread Potato Virus Y	The University of Minnesota – North West Regional Outreach Center proposes to assess and develop controls for mechanical, and biological factors that help spread Potato Virus Y, a disease limiting the yield and quality of seed potatoes and threatening the MN commercial potato industry. The University of Minnesota – Northwest Research & Outreach Center (UMN-NWROC) proposes to assess and develop controls for mechanical, and biological non-aphid transmission of Potato Virus Y (PVY), a disease limiting the yield and quality of seed potatoes and threatening the MN commercial potato industry. 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 tactics to avoid within-field mechanical transmission of PVY and ameliorate the potential vector and other impacts of defoliating insects on PVY spread.	$90,494.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Minnesota Department of Agriculture	$1,334,002.39	Project 12 - Identifying and Overcoming Stakeholder Barriers to Adoption of Biotechnology in MN Specialty Crops	This project by the University of Minnesota will identify grower and consumer barriers to adoption of biotechnology (genetically engineered, or gene edited) improved specialty crops in MN to reveal opportunities that improve efficiency and quality of specialty crop production. Despite the advantages of biotechnology, especially gene editing (CRISPR) for crop improvement there is resistance to adoption by MN specialty crop growers and consumers. Biotechnology is safe for the environment and growers, increases yield, and increases profitability, yet negative perceptions prevent adoption. Agronomic crops have successfully adopted biotechnology to improve grower and environmental outcomes. The goal of this project is to understand the barriers to adoption of biotechnology in specialty crops and develop educational information to address any misconceptions, concerns, and barriers, and in turn, facilitate informed discussion on the topic of biotechnology for specialty crop improvement.	$99,924.00
Minnesota Department of Agriculture	$1,334,002.39	Project 13 - Placing Community at the Center of New Farm to School Grant Support and Evaluation	The Institute for Agriculture and Trade Policy (IATP) seeks to support the success and formally evaluate the implementation of the Minnesota Department of Agriculture (MDA)'s pilot of a brand-new grant program reimbursing schools for purchases from local farmers. With a goal of increasing their purchases of specialty crops from Minnesota growers, IATP will provide training and technical assistance to schools selected by MDA to receive funding in the pilot year of the grant program. At the same time, IATP will work with partners from U of MN Extension to design and implement an evaluation plan for the grant program, combining community-based participatory evaluation strategies with in-depth economic analysis to gather feedback and assess the impact of the new program, especially focusing on the actual and potential impacts on Minnesota specialty crop growers and improvements to distribution systems to expand institutional access to local foods. IATP and Extension will provide evaluation data to MDA to support and inform their planning for the expansion of the grant program beyond its pilot year and produce public-facing materials to promote and document the program as it grows.	$88,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Mississippi Department of Agriculture and Commerce	$434,543.90	Containerized Organic Production of Culinary Herbs and Spices	Mississippi State University will conduct research to evaluate selected culinary herbs and spices suitable for containerized production and to develop sustainable management practices. Results will help growers diversify crop profiles and improve farm profitability. The objective of this project is to evaluate and identify suitable cultivars of selected herbs and spices for containerized production and to develop and promote sustainable production practices. Results from this project will be distributed through direct farmer contacts, meetings, field days, and publications.	$12,305.00
Mississippi Department of Agriculture and Commerce	$434,543.90	Effect of Low Rate of Dicamba on Tomato at Different Growth Stages and Its Progeny	Mississippi State University will determine the effect of low rates (simulated drift rate) of dicamba (clarity) on tomato at different growth stages and possible contamination of the fruit (food safety). The experiment will be conducted in the greenhouse. The results of this research will show the sensitivity of tomato growth stages to low rate of dicamba and if dicamba will translocate in the fruit. Results from this project will be made available to stakeholders at the Vegetable Field Day, Workshop, and SWSS Annual Meeting.	$27,780.00
Mississippi Department of Agriculture and Commerce	$434,543.90	Expanding Agriculture Initiatives in the Mississippi Delta by Cultivating, Disseminating, and Growing Organic Vegetables	The Expanding Agriculture Initiatives in the Mississippi Delta by Cultivating, Disseminating, and Growing Organic Vegetables project is proposed to assist the Mississippi Delta Community College Agriculture department in (1) developing the techniques of growing organic specialty vegetables; (2) hosting annual Farmer's Conferences and Workshops; (3) improving fresh vegetable consumption and education of the Mississippi Delta (Moorhead) community; and (4) enhancing the institutions' Agriculture program by engaging students in extensive research related to specialty crops. With the cooperation of Mississippi State University – College of Agricultural and Life Sciences, Mississippi State Extension Services (Delta Research and Extension Center – DREC Office), the Town of Moorhead, and industries such as Simplot Grower Solutions and Wade Incorporated at least 35% (727 citizens) of the community will be assisted through workshops and educational sessions on the importance of fresh fruit and vegetable consumption. Yields from the crops will be distributed during the Farmer's Conferences and Workshops.	$18,441.13

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Mississippi Department of Agriculture and Commerce	$434,543.90	High Tunnel Production of Grafted Tomatoes Using Different Rootstocks	Mississippi State University will conduct research to: 1) Compare crop yield and quality of tomato varieties including commercial hybrid and heirloom varieties in a high tunnel; 2) Investigate crop yield and quality using three plant types including seedlings and grafted plants with two different rootstocks; and 3) Investigate the effect of a high tunnel on variety performance and time of fruit production. The ability to provide local markets with high quality tomatoes during a relatively off-season where other sources are not available is key to high market prices. High tunnels serve as an economic tool to increase frost-free days and extend growing season into early spring and late fall. Growing grafted tomato plants in a high tunnel production system provides growers with a unique opportunity to produce tomatoes with high yield, superior quality, and higher market price early or late in the season. Results from this project are expected to increase competitiveness of vegetable production and promote a healthy local food system in Mississippi.	$18,572.50
Mississippi Department of Agriculture and Commerce	$434,543.90	Impact of Sweet Potato as a Natural Energy Food Prebiotic to Improve Health and Endurance	Mississippi State University (MSU) and the University of Memphis propose to investigate the microbial changes associated with a 30-day daily ingestion of sweet potatoes and their impact on performance and health. To accomplish this, farmers in Pontotoc, Mississippi will provide sweet potatoes for participant ingestion throughout the study. Sweet potatoes are a nutrient-rich prebiotic food that has been shown to improve intestinal health and nutrient utilization through increased beneficial bacteria in the gut. Prebiotics improve gut health by providing beneficial bacteria with short chain fatty acids, of which butyrate is preferred, to increase colonic epithelial cell proliferation and cancer cell apoptosis. A moderate sized sweet potato (150 g) contains ~53% carbohydrate with 32% of this as simple sugar (e.g. glucose). Carbohydrates are the body's preferred fuel source during high intensity physical activity, giving active populations interest in consuming the vegetable. The changes in microbial community composition have not yet been investigated in conjunction with carbohydrate utilization during exercise. Positive outcomes from this study will drive an increase in sweet potato consumption for improved health and endurance. Microbial community alterations will be	$34,788.45

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			examined in line with carbohydrate utilization during exercise through fecal sampling, performance, and cholesterol testing. Positive findings of this research will increase the marketability of sweet potatoes to active populations for improved health and performance.	
Mississippi Department of Agriculture and Commerce	$434,543.90	Improving Market Access for Mississippi Fruit and Vegetable Farmers with Food Safety and Audit Services	Up in Farms LLC will provide Mississippi fruit and vegetable farms with farm training, self-assessment assistance, access to an electronic food safety and record keeping system, and USDA Harmonized GAP audit services under the USDA Group GAP system, giving more farms access to markets that require food safety certification and compliance. We propose here to work with growers and MDAC to provide Group GAP farm assessment and audit services for up to ten Mississippi fruit and vegetable farms for three years.	$7,424.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Mississippi Department of Agriculture and Commerce	$434,543.90	Let's Plant! Mississippi School and Community Gardens	The Mississippi Department of Agriculture and Commerce will partner with schools and community organizations to fund gardens designed to increase agriculture education of growing specialty crops. The purpose of this project is to educate school aged children and communities on how to grow specialty crops by offsetting some of the costs it takes to start a garden. Home gardening interest has increased as a result of the COVID-19 pandemic, but those that have never gardened before do not know where to start. This is an educational project designed to meet this need through schools and communities. This project will increase the consumer's awareness of specialty crops grown in the state and the hard work it takes to make these crops to the grocery store shelf. It is expected that once children are educated on specialty crops by gardening, consumption among the school age children will increase, not only aiding them in a more nutritional diet, but also causing an increase in the demand for Mississippi fruits and vegetables.	$20,000.00
Mississippi Department of Agriculture and Commerce	$434,543.90	Local and Regional Marketing Opportunities for Socially Disadvantaged Farmers with Specialty Crops	The Mississippi Association of Cooperatives (MAC) will research and develop viable commercial production systems of specialty crops that are grown for maritime shipping industries, direct and commercial markets, farmers market and regional supermarket chains. We will reach new and beginning, socially disadvantaged farmers, whether rural and/or urban, to grow and receive training on sustainable methods for specialty crop production and marketing. MAC will develop and implement an educational marketing handbook that will aid in constant communication between the farmers and food service directors, farmer's market directors, direct and indirect market managers, and regional supermarket chains. Also, this program will be used to sustain socially disadvantaged farmers and cooperative members while increasing their farm income to be able to supply the market demand.	$17,327.05

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Mississippi Department of Agriculture and Commerce	$434,543.90	Public Relations and Marketing Campaign to Promote Buying Mississippi Sweet Potatoes	Farm Families of Mississippi will develop and implement a promotional campaign that educates consumers on the benefits of buying Mississippi grown sweet potatoes. We will establish a baseline sales figure for the 2020 crop year, produce and air television and radio spots and buy billboards and digital marketing space promoting the purchasing of Mississippi sweet potatoes. We will then compile sales figures for the 2021 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. Our goal is to select media who reach consumers making the food buying decisions for their households, as well as consumers who are unaware Mississippi is one of the top growers of sweet potatoes in the world.	$150,000.00
Mississippi Department of Agriculture and Commerce	$434,543.90	Sustainable Production of Off-season Strawberry Using High Tunnels and Biodegradable Mulches	Mississippi State University will conduct research to: 1) Identity strawberry cultivars suitable for local climates in a high tunnel production system; 2) Investigate the effect of a high tunnel on yield, quality, and time of fruit production in strawberry cultivars; 3) Investigate the effect of biodegradable mulches on strawberry yield and quality. Growers have increasing interest in protected culture of strawberry using economic season extension tools like high tunnels. High tunnels can extend the growing season into early spring or late fall, advance fruit harvest, and introduce considerable market edges for off-season crop production. High tunnels also protect plants from abiotic and biotic pressure, increase crop yield and quality, and potentially reduce pesticide applications. There lies an urgent need to identify strawberry cultivars suitable to local subtropical climate and incorporate sustainable practices. Results generated from this study are expected to increase competitiveness of small fruit production and promote a healthy local food system in Mississippi.	$18,572.50

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Mississippi Department of Agriculture and Commerce	$434,543.90	Using Sicklepod Extract Formulations as Natural and Effective Deer Repellent in Sweet Potato	The Mississippi State University will provide effective protection from deer herbivory in sweetpotato production systems using sicklepod extract formulations. The main goal of this project is to identify the best sicklepod extract formulation that is effective in repelling deer in sweetpotato through field tests. The sicklepod extract formulations will also be compared with commercially available synthetic and natural repellents to determine the relative effectiveness of the sicklepod extract repellent. Results from this project will be disseminated to approximately 1,200 stakeholders at the Annual Mississippi Sweetpotato Field Day, US Sweet Potato Council Convention, the Southern Region Horticultural Crops Conference and American Society of Agronomy/Crop Science Society of America (ASA-CSSA) annual meeting combined. The general tasks of the project will include preparing and characterizing four formulations of sicklepod extract for improved deer repelling efficacy, and use these four formulations for trials at the R. R. Foil Plant Science Research Center (Starkville) and Pontotoc Ridge-Flatwoods Branch Experiment Station (Pontotoc) to determine which formulation(s) is most effective in repelling deer.	$35,050.00
Mississippi Department of Agriculture and Commerce	$434,543.90	Utilizing Mechanical Harvesting to Improve Productivity in Tea Production	Mississippi State University will collaborate with tea growers in Mississippi to develop efficient mechanical harvesting strategies in tea production. Results will be used to help growers identify suitable mechanical harvesting practices to reduce labor cost, optimize tea quality, and improve production efficiency. The overall objective of this proposed project is to obtain preliminary data on identifying efficacious and cost-effective harvesting strategies as proof of concept, which will provide guidance to domestic tea growers. Output of this project will also allow researchers to focus on the applicable or develop new technology to improve mechanized tea harvesting tactics for US tea growers and help them be successful and profitable. The project's results will be disseminated through direct farmer contacts, grower meetings, workshops, field days, and national conferences.	$25,981.95

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Missouri Department of Agriculture	$425,702.84	A Marketing Campaign Celebrating Missouri's Specialty Crop Growers	Missouri Department of Agriculture's Ag Business Development Division requests funds to promote the Missouri Grown specialty crop industry in Missouri, particularly berries, peaches, apples, pumpkins and Christmas trees. Missouri Grown will promote these products to consumers just prior to and at the time of harvest, encouraging consumers to find Missouri grown items at their local retailer and at grower u-pick and agritourism locations. The advertising campaign will be statewide, with targets in the areas of large production. This one-year project aims to assist the specialty crop industry by increasing consumer awareness of those crops grown in Missouri, as well as the producers who sell their specialty crops from the farm in the form of a u-pick or choose your own Christmas tree. Radio advertisements will be placed statewide during particular specialty crop seasons. For instance, advertisements to promote strawberry season will be placed in May. The ad will encourage consumers to patronize Missouri strawberry growers, with the suggestion to visit the Missouri Grown website to find a u-pick operation in the area.	$12,535.12
Missouri Department of Agriculture	$425,702.84	Alternative Host Plants of GRBV in Missouri Vineyards	The University of Missouri will research Grapevine Red Blotch Virus (GRBV), a relatively newly discovered plant virus that negatively impacts grape production, which in turn can reduce wine quality. In 2016, GRBV was confirmed to be present in Missouri and subsequent statewide survey revealed that 35% of grapevine samples analyzed were positive for GRBV. We propose to survey host plants of E. carinata and E. binotata found within or on the periphery of vineyards infected with GRBV. Alternative herbaceous host plants of E. carinata in the family Asteraceae have become common vineyard weeds because of the development of resistance to the active ingredient glyphosate. Whereas, alternative host plants of E. binotata are woody and more similar to grapevines. Further, we propose to characterize acquisition and transmission of GRBV by E. carinata. Identifying GRBV host plant reservoirs will result in management plans for either the insect vectors, the control of host plant reservoirs of GRBV or a combination approach.	$16,538.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Missouri Department of Agriculture	$425,702.84	Evaluation of Satellite Mushroom Prefabricated Pod Production	Missouri State University will evaluate satellite mushroom prefabricated pod production as a comprehensive, collaborative project to develop and increase mushroom production and marketing in Southern Missouri and in the state. The project will promote, through a demonstration production set-up, workshops and field days, production practices in newly developed production pods developed by Willow Mountain Mushrooms as well as alternative methods of production. Pod production using pre-inoculated and pinned cremini and oyster mushroom blocks has the potential to expand specialty crop mushroom production and marketing for increased revenue. The project will also expand options for customer use of mushrooms, providing education regarding freshness determination, incorporation into meals and how to store and preserve. Educational impact will be expanded by training extension and outreach specialists in mushroom production practices.	$25,862.00
Missouri Department of Agriculture	$425,702.84	Evaluation of Southern Highbush Blueberry Varieties Adaptability to Southwest Missouri	Missouri State University will evaluate the potential of Southern Highbush Blueberry (Vaccinium Darrowi x V. virgatum) varieties as viable crop in southwest Missouri growing conditions. A new planting will be established at the State Fruit Experiment Station in Mountain Grove, Missouri and will be used for this project. Five (5) varieties of southern highbush blueberry will be established in a new planting site and data recorded to determine if the varieties are well suited for the growing conditions of Southwest Missouri. The varieties chosen for this study are Gupton, Legacy, Misty, Ozarkblue and Pearl. If Southern Highbush Blueberry is a viable crop option for Southwest Missouri this will allow growers to diversify the crop offerings and allow current blueberry growers a novel offering at the markets. Results of this evaluation will be disseminated to growers and stakeholders through grower meetings, social media, university blogs and field days.	$16,380.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Missouri Department of Agriculture	$425,702.84	Expanding Watermelon Production and Market in Missouri	Missouri Vegetable Growers Association (MVGA) will evaluate and assess varieties and the feasibility of growing watermelon in protected systems for early production. One objective of this project is to assess and extend the information on the feasibility of growing watermelons under protected systems (low and high tunnels) to reach the 4th of July market. Securing a market share for the 4th of July is expected to increase significantly the sustainability of small and medium-size specialty crop farmers in Missouri. A second objective is to evaluate and extend the information on performance and consumer acceptance of newly released watermelon varieties. Environmental conditions in Missouri differ from states (California, Florida) where watermelon breeding and tasting occur. Therefore, watermelon varieties performance in Missouri may vary and consumer acceptance may differ. The Missouri Vegetable Growers Association in collaboration with University of Missouri Extension will coordinate research at the Horticulture and Agroforestry Research Center, and extension activities including on-farm trials across Missouri.	$44,740.00
Missouri Department of Agriculture	$425,702.84	Feasibility of Producing Sweet Potato Transplants and Field Production in Missouri	The University of Missouri will assess and extend information about the economic feasibility of growing sweet potato transplants/slips under protected systems (low and high tunnels) and field production out of these slips in Missouri. On-farm slip production and early field planting reduce costs and optimize the length of the production season and yield. Sweet potato is propagated vegetative, so most farmers in Missouri purchase their slips from greenhouse growers or from southern sweet potato producing states. This project proposes on-farm studies for growers to experience slip production under protected systems and field production out of these slips, and outreach activities to extend this information as well as the economic feasibility. On-farm slip production may reduce costs, improve slip quality, and optimize planting date, which would increase profitability and production in Missouri increasing supply and local markets share.	$47,928.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Missouri Department of Agriculture	$425,702.84	Growing the Lavender Industry in Missouri	This project will be conducted by researchers at University of Missouri Extension to determine a set of standardized growing practices for lavender in Missouri. Lavender (Lavandula spp.) has increased in popularity for its appeal in the home landscape and its usefulness in culinary, medicinal, decorative products, beauty products, cut flowers, aromatherapy, and essential oil production. As a result, interest in commercial production has also increased and cultivation resources for growers in Missouri are sparse. Growing practices will include plant establishment and soil preparation, winter protection, cultivar selection, plant phenology, insect and disease issues, optimal flower and oil production parameters, and fertilization. Results of this project will be disseminated via workshops, field days, and guide sheets for growers.	$39,274.00
Missouri Department of Agriculture	$425,702.84	High Tunnel Production of Physalis to Expand Missouri's Vegetable Market	The University of Missouri will study a comparison of cultivars for Physalis (husk tomatoes) in high tunnels and in the field. Although popular, with Latino ethnic groups, Physalis is growing in popularity among other groups and there is a need for more production information. Yield and quality over time will be measured in both growing systems with an attempt to produce in the fall in high tunnels. Fertility treatments of potassium will be compared to determine Physalis yield and quality response. Results and lessons learned will be reported at commercial grower events, home gardener events with Master Gardeners and high traffic events such as the Missouri State Fair.	$22,173.00
Missouri Department of Agriculture	$425,702.84	Identifying Herbicide Tolerance in Tomatoes and Assessing Fruit Safety	The University of Missouri will enhance the profitability of fresh market production of tomatoes by identifying high-yielding varieties with reduced sensitivity to herbicide drift. The safety of marketable tomatoes will be assessed by determining if herbicide residues are present in the harvested fruit. Results will be widely disseminated to stakeholders at grower meetings, newsletter articles, and on-line presentations. The goal of the project is to evaluate the fruiting response of selected determinate tomato varieties for commercial production treated with either dicamba or 2,4-D herbicide. Additionally, the risk of consumer exposure to herbicide residue in harvested fruit from herbicide treated plants will be determined. This	$39,388.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			project should identify tomato varieties that may have tolerance to dicamba or 2,4-D drift injury and produce a marketable crop. Ultimately, this project should boost tomato sales and inspire consumer confidence in the safety of this crop.	
Missouri Department of Agriculture	$425,702.84	Improving Urban Soils through Sweet Potato Production	Cultivate KC is developing a new technique, which utilizes the growth habit of the common sweet potato, and free materials such as leaves, woodchips and other waste streams to quickly improve soil organic matter, increase nutrient cycling, increase water infiltration, promote beneficial organisms, and decrease costly inputs, while at the same time growing a profitable and nutritious cash crop. We will host a series of field days on our farms and partner farms to demonstrate the process to area farmers. During these field days, farmers will participate in the preparing and planting of a demonstration plot, as well as learning how and why this technique works from our project coordinator. We and our partner farmers will keep data throughout the growing season on water use labor/maintenance time, yield, soil improvement, and overall farmer satisfaction with the process. If these experiments support our findings from the past three seasons, we feel strongly that this technique will be an important tool in improving the profitability and productivity of urban and peri-urban farms where abundant waste streams are readily available and free, and soils are often poor.	$15,082.60
Missouri Department of Agriculture	$425,702.84	Learning to Love and Grow Specialty Crops at the Market	The Webb City Farmers Market will increase adult and child knowledge related to specialty crops through a comprehensive program of on-site classes, demonstrations, and activities, resulting in increased consumption of specialty crops. Partnering with MU Extension, master gardeners and market staff and volunteers, the market will provide both formal and informal learning opportunities based, in part, on the USDA's SNAP-Ed Connection Nutrition Education Curricula and Materials covering cooking, farmers markets, food safety, gardening, and healthy eating. A garden at the market will be a focus of children's learning activities but will also provide opportunities to educate adults by demonstrating growing methods such as raised beds, sequential planting, cover cropping and various mulches. A year-round market on Saturdays, the Market can provide gardening/nutrition education	$38,296.64

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			appropriate to the season. Cooking demonstrations/tastings targeted at adults will take place year-round, as will children's activities.	
Missouri Department of Agriculture	$425,702.84	Pest Management to Enhance the Profitability of Missouri Elderberry	Lincoln University is requesting these funds to provide integrated pest management (IPM) tools for eriophyid mites, Phyllocoptes wisconsinensis and Epitrimerus trilobus in elderberry production. Lincoln University will collaborate with Missouri Department of Agriculture and University of Missouri to lead and execute the project in the context of an anticipated elimination of the risk poses by the current COVID-19 pandemic. We will work with small-scale growers and nursery operators in a participatory research approach to identify native predaceous mites and determine their effectiveness against P. wisconsinensis and E. trilobus. We will evaluate the compatibility of predaceous mites with commonly used miticides in selected elderberry farms and nurseries. Ultimately, we will recommend predaceous mites' species and miticide that will be effective for elderberry orchard and nursery operations. We expect to increase the adoption and implementation of sustainable pest management tools by elderberry producers. This will lead to production expansion and increased profitability of elderberry orchards and nurseries in Missouri.	$23,924.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Missouri Department of Agriculture	$425,702.84	Raising the Profile and Sales of Specialty Crops in the West Central Region	Katie Nixon of Green Gate Family Farm and Ami Zumalt of Red Ridge Farms will work together with the KC Food Hub and New Growth to support other small to mid-sized farms in the West Central (WC) Region as they distribute more specialty crops to a growing audience of buyers seeking local food. This project will: enhance the wholesale market for locally grown Specialty Crops in WC Missouri; encourage other specialty crop farmers to expand their growing operations and enter the wholesale market; and tell the story of the specialty crop industry in the west central region. These objectives will be accomplished through crop planning meetings with farmers and buyers, marketing to attract both farmers and buyers to work together in a distribution system, and publishing articles and video stories of farmers growing specialty crops. Expected outcomes include an increase in the number of farms and volume of specialty crops entering wholesale outlets, an increase in the number of wholesale buyers purchasing local specialty crops and a greater awareness in the region about growing specialty crops.	$49,339.00
Montana Department of Agriculture	$3,071,685.94	1. Developing Economic Opportunities for Montana's Cold-Hardy Berry Industry	Lake County Community Development Corporation is partnering with the Montana Berry Growers Association (MTBGA) to meet the marketing, and food product development of cold-hardy berry growers across Montana. Cold-hardy berry production, which includes haskaps, saskatoons, sour cherries, currants and aronia berries, is on the rise in Montana. Coordinated production-based research and outreach is currently being carried out by Montana State University and its associated Western Agricultural Research Center, test-orchard sites, MSU faculty and staff, and MSU Extension program. The focus of this project is to build upon these efforts by developing and promoting post-harvest economic opportunities. This includes creation of a cohesive marketing message and platform for the MTBGA, identifying and prioritizing emerging markets for berry-based food products, and proposing pragmatic pathways for accessing those markets. This project will result in the development of berry-specific food product prototypes available to producers interested in creating value added berry –based food products.	$90,189.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Montana Department of Agriculture	$3,071,685.94	2. Agronomic and Economic Evaluation of Mung Bean and Adzuki Bean in Montana Agricultural Production Systems.	The Eastern Agricultural Research Center, Montana State University has been leading the state-wide pulse crop (pea, lentil, and chickpea) variety evaluation for more than 13 years. Montana is limited to a few species, mainly pea, lentil, and chickpea, which are becoming more prone to biotic and abiotic pressure and market volatility. Considering the trends in climate change, new emerging diseases, and market price volatility, diversifying the pulse production is highly important from agronomic and economic standpoints. Our communications with growers have confirmed that they are interested in incorporating economically feasible new pulse species into their cropping systems. In our previous project, the MSU-EARC research team has conducted germplasm screening and selected two mung bean and two adzuki bean varieties that have potential to grow in Montana. We also conducted a preliminary seeding date and rate, and fertility studies for these two mung bean and adzuki bean varieties in eastern Montana.	$133,788.00
Montana Department of Agriculture	$3,071,685.94	3. Planting Seeds for Success	Planting Seeds for Success is a project of the National Center for Appropriate Technology (NCAT) to establish a sustainable model to support the Montana Harvest of the Month (HOM) program and to increase the sale of Montana-grown specialty crops to Montana institutions and businesses. HOM showcases a different Montana grown food each month, providing an easy-to-use framework to start or grow farm to institution programs, as well as resources, materials, and guidance to institutional food service operators and specialty crop producers.	$136,728.00
Montana Department of Agriculture	$3,071,685.94	4. Specialty Crops Bioherbicides For Control of Canada Thistle and Field Bindweed	The Department of Plant Science and Plant Pathology at Montana State University, under the leadership of Professor David Sands, aims to develop bioherbicides for Canada thistle and field bindweed for use in specialty crop production. Montana's agriculture needs a new tool for weed management to supplement their current use of tillage, crop rotation, and herbicides. Two deep-rooted invasive weeds, Canada Thistle and Field Bindweed, are especially problematic (somewhat manageable with chemicals and rotation) in our production of our high acreage specialty crops (peas, lentils, chickpeas). Pulses' weakened competitive ability can increase thistle and bindweed infestation in pulse: grain rotations. The Organic Advisory and Educational Council	$255,675.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			has promoted and funded two years of this research at MSU, and donated sick plant samples, to focus on finding and improving local (endemic) strains of fungi to serve as natural bioherbicides.	
Montana Department of Agriculture	$3,071,685.94	5. Integrated Management Strategies to Enhance Production of Organic Lentils	Organic pulses are a promising specialty crop for Montana with the potential to add significant value and profits to farmers. However, weed management is a major challenge in organic pulse crops. Previous SCBG-funded research has shown that integrated weed management practices in organic chickpeas can suppress weeds and increase yields 6-fold over standard grower practices. The efficacy of these practices is based on establishing a dense crop stand before weeds emerge. Establishing a dense crop stand can be difficult, as pulse crops are susceptible to seed and seedling diseases. Variety choice and seeding date are the primary options for managing these diseases organically, but little information exists on optimal seeding rates or dates for lentils in our environments. In addition, seeding rate and seed inoculants can be used to increase lentil growth, yields, and weed suppression.	$193,681.00
Montana Department of Agriculture	$3,071,685.94	6. Developing Orchard Management Practices to Improve Montana Cider Quality	Hard cider is a growing specialty crop industry for Montana and surrounding states. Most local cideries produce and market high-quality cider. These ciders rely on quality juice from cider-specific apple varieties. In addition, many of the cider and desert apple growers in Montana are beginning farmers that would benefit from continued education on orchard management. In this research and outreach project, MSU-Western Ag. Research Center (WARC) will evaluate the effects of regulated deficit irrigation (RDI) on cider juice quality, yields, water conservation, and orchard labor. We will partner with Dr. Carol Miles at WSU-NWREC in Mount Vernon, WA, to conduct similar research trials and train a graduate student.	$123,104.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Montana Department of Agriculture	$3,071,685.94	7. Characterization of Chickpea Pathogens in The Pulse Growing Regions of Montana	Foliar and soil-borne pathogens are common in pulse crops and chickpea (Cicer arietinum L.) is no exception. Fusarium root rot is one of the major soil-borne diseases of chickpea. Very little to no information is available on Fusarium root rot and wilt pathogens of chickpea not only in Montana but across the USA. The predominant species that cause Fusarium root rot in chickpea in Montana are not known. Fusarium wilt caused by Fusarium oxysporum is a widespread disease of chickpea and the forma specialis of F. oxysporum in Montana has not been determined.	$99,448.00
Montana Department of Agriculture	$3,071,685.94	8. Expanding Opportunities For Winter Pulses in Montana	Winter pulse production has been limited to milder climates in the US – generally in more southern states or coastal climates. Though examples of successful production of fall-sown winter peas have been reported in Montana and North Dakota, climatic conditions must be optimum. Successful production of winter pea and lentil in Washington and Idaho is more frequent due to the milder Mediterranean type climate. The goal of this project is to expand the potential for reliable production of winter pea and lentil in Montana through greater understanding of limiting winter conditions and increased potential for pea and lentil varieties to survive cold and harsh conditions over the winter months. Relative survival of winter pea and lentil germplasm and varieties will be evaluated at up to 4 locations across Montana beginning in the fall of 2020 (one location) and continuing through the fall of 2022. Approximately 50 winter pea germplasm accessions and varieties will be sown in replicated experimental designs at four locations in Montana. Plant survival, phenological data, yield and seed quality traits will be recorded. Weather data collected from nearby or in field weather stations will be used to help explain the relative survival and performance data.	$217,595.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Montana Department of Agriculture	$3,071,685.94	9. Sustaining Montana's Beginning Specialty Crop Producers Through Mini-Grants and Field-Tested Farmer-To-Farmer Impact Reports	Sustaining Montana's New and Beginning Specialty Crop Producers through Mini-grants and Field-Tested Farmer-to-Farmer Impact Efficiency Reports will support Community Food and Agricultural Coalition's (CFAC) established mini-grant fund to financially aid a minimum of 20 beginning specialty crop producers over a two-year period. Funds will be used to offer mini-grants to farmers to strategically purchase farm infrastructure or tools that will increase on-farm production capacities of new and beginning specialty crop producers. The project will provide education to farmers by way of one-on-one technical assistance with CFAC and the Western Ag Research Center (WARC) and peer learning through Field Tested reports and podcasts.	$220,321.00
Montana Department of Agriculture	$3,071,685.94	10. Development of High Throughput Technologies For Improved Detection and Breeding For Resistance to Ascochyta Blight of Chickpea	Chickpea acreage has been increasing in Montana from 99,000 acres in 2016 to 390,000 acres in 2018, due to decreasing prices of other pulses, better drought tolerance, and natural resistance to root rots. However, foliar blight caused by Ascochyta rabiei continues to be a major limiting factor to its use in dryland cropping systems. This pathogen, which is also seed borne, can cause devastating losses in the right environmental conditions and requires multiple foliar fungicide applications for control. The use of resistant varieties and planting disease free seed are the most effective methods to prevent this disease for producers. Breeding for resistance to Ascochyta blight is a major component of all pulse breeding programs, but marker assisted selection (MAS) can be difficult to use due to the large number of resistance genes, an ever-evolving pathogen, as well as time and cost.	$136,344.00
Montana Department of Agriculture	$3,071,685.94	11. Charactering Antibiotics Resistance of Fire Blight Pathogens in Montana	Fire blight, caused by Erwinia amylovora, is the most devastating disease of apple throughout Montana and is becoming more problematic as seasons grow warmer which favorites the disease development. Antibiotic treatments are commonly used in apple orchards to manage fire blight disease. However, the fire blight pathogen, can quickly develop antibiotic resistance which leads to a failed disease management. Despite its importance in making disease management decisions, information of antibiotic resistance of fire blight pathogen in Montana is currently missing. In this project, MSU researchers in the Plant Sciences and Plant Pathology Department and	$123,352.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			the Western Agriculture Research Center aim to characterize antibiotics resistance of fire blight pathogen across Montana.	
Montana Department of Agriculture	$3,071,685.94	12. Providing Seed Potato Growers With Novel tools To Manage Virus	Montana certified seed potatoes are produced under stringent standards resulting in high quality seed with low disease levels. Over the last 10 years, potato production areas in the state have been steadily shrinking while maintaining overall acreage. This has resulted in highly concentrated areas of seed potato production which pose risk to the industry when disease outbreaks occur. This project will develop a GIS application embedded in the Montana Seed Potato Certification SQL database that tracks disease movement in real time across production areas using Google Earth API. This application will provide certification officials the ability to make risk assessments at time of planting by mapping initial disease inoculum levels to geographic areas.	$65,293.00
Montana Department of Agriculture	$3,071,685.94	13. Improving Sampling Strategies For Detection of Soilborne Plant Pathogens and Beneficial Microbes in Pulses	This project by Montana State University will focus on pulse crops, specifically lentil and pea, but potentially benefit all specialty crops grown in Montana that are affected by soilborne plant pathogens. This project will leverage current activities in Montana, Washington, and North Dakota to validate a soil testing system that exists in Australia for detection of soil- and residue-borne plant pathogens. These states have a project underway to determine the most important species of Fusarium causing root rot of lentils in the Northern Great Plains. This project will add additional pathogens including fungi, oomycetes and nematodes, and an exploratory objective to look at beneficial microbes in the soil and their relationships with soilborne plant pathogens.	$63,490.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Montana Department of Agriculture	$3,071,685.94	14. Foundational Research for Specialty Crop Pollination Security - The Wild Bees of Montana, 2	Building on the previous SCBGs by Montana State University researchers on the (Wild) Bees of Montana, this project will continue the first documentation of occurrence and distribution of Montana's native bees. Native bees provide billions of dollars of pollination services annually, and are well known to be under threat from a variety of established and unknown factors that have resulted in declines throughout the nation and beyond. Montana lacks baseline knowledge of these critical elements of successful Specialty Crop production, leaving producers and the public at risk to lose these services without the ability to interpret the events. In addition to collecting throughout the state, this project will train students and stakeholders in bee taxonomy, produce taxonomic tools specific to Montana, and build a foundation for more directed research on pollinators of specific crops.	$456,544.00
Montana Department of Agriculture	$3,071,685.94	15. Montana Tree and Shrub Database and Publications	Montana Nursery and Landscape Association (MNLA) is requesting funds to research and create a digital, searchable reference library of approximately 400 regionally adapted Tree and Shrub Horticultural Specialty Crops (HSC). Individual records will contain high quality photographs, plant growth rates and habit, mature sizes, distinctive qualities, range of adaptation, specific requirements, availability of pest resistant or notable cultivars, and cultivation/management practices. Content from the library will then be used to create two different publications. The first is a 40-page informational catalogue directly marketing Montana grown trees and shrubs to consumers. The second is a 150-page tree and shrub guide for field use by any HSC delivery system or access point. These include over 900 entities licensed to sell or distribute nursery stock in Montana.	$95,960.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Montana Department of Agriculture	$3,071,685.94	16. Culinary, Nutritional, and Value-Added Potential of Montana Pulses - A Geographical Survey Among Four States	The Montana State University (MSU) Food Product Development Lab and the MSU Pulse Crop Breeding Program propose to compare the culinary, nutritional, and processing qualities of pulses from Montana and other pulse-producing states. Three chickpea varieties, including Sierra, Orion, and Marvel, and two lentil varieties, including Richlea and Pardina, will be collected from eleven USDA Agricultural Experiment Stations across four states. These stations represent the different geographical growing regions, including 5 regions in Montana, and 2 regions each in Idaho, Washington, and North Dakota. The same five pulse varieties from the eleven regions will be compared for their soaking and cooking performances, as well as macronutrient levels including protein, carbohydrates, fat, fiber, and minerals. Selected samples from Montana and from other states will further be compared for their consumer acceptance and sensory profiles, as well as their extrusion performances. This project will provide scientific data to evidence Montana pulses' competitiveness in the global trade markets. The findings from this project will also provide geographical implications to advance the growing, post-harvest handling, and product innovation of Montana pulse crops.	$234,010.00
Montana Department of Agriculture	$3,071,685.94	17. MT Hops Implementation Plan	Project Outcomes: Headwaters will be the lead organization that helps hops growers from across the state establish the MT HOPS Association (MHA). MHA will have similar composition to other entities like the Montana Brewers Association. In addition to creating an association, Headwaters is requesting SCBG funds to create an economic input & output study that canvasses the current and future outlook of the hops industry across the state. The hops industry in Montana has significantly grown over the past 5 years and there is more acreage producing hops each year. The Bozeman and Flathead valleys are arguably the hubs where more acres are grown than other regions. However, there is more acreage and start-up farms being established across the state. These farms range from 5 to 15 acres. The growers are primarily focusing on growing hops that can be successful in their respective climate, but they are still experimenting with different varieties. The ultimate goal is to increase the number of Montana	$48,575.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			grown hops that are sold both in and out of Montana, a direct value add.	
Montana Department of Agriculture	$3,071,685.94	18. Improving Production and Profitability in Montana Vineyards	With 15 wineries and over 50 vineyards, the grape and wine industry in Montana is posed to profit from value-added and agritourism-based specialty crop production. This project is a continuation of the SCBG-funded collaboration between MSU-Western Ag Research Center (WARC) and the Montana Grape and Winery Association (MTGWA) and will facilitate growth of Montana vineyards and wineries through research and outreach aimed at the following objectives that have been identified by grape growers and winemakers in the state: 1) Research to identify grape varieties adapted to varying climates across Montana and management practices that will optimize grape yields and quality. Research will consist of replicated trials at WARC and on commercial vineyards. The management practices evaluated will be crop load, canopy management, and season extension consisting of draping vines in row cover.	$149,923.00
Montana Department of Agriculture	$3,071,685.94	19. Increasing Consumer Sales With New "Montana Cider Celebration in a Box" Promotional Events	The Northwest Cider Association proposes this specialty crop grant and will be the organization with the contractual relationship with the state and will lead and execute the project. The Northwest Cider Association (NWCA) is a member-based nonprofit that connects cidermakers to cider lovers. There are currently 7 cidermakers in Montana. This project is designed to leverage current COVID market conditions and changing consumer purchasing behaviors to (1) enhance the competitiveness of Montana hard cider through increased sales in Montana, and (2)	$53,220.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			enhance the competitiveness of Montana hard cider through increased consumption in Montana.	
Nebraska State Department of Agriculture	$822,737.48	1. Nebraska Specialty Crop Conference and Trade Show	The interest in specialty crops has been strong throughout Nebraska for many years. Over the past 13 years, the SCBGP has funded projects focused on plant pest and disease control, nutrition education and consumption, organic and sustainable production practices, promotion, environmental crop research, and trade enhancements/innovations. These projects have been popular and well received and some have had a lasting impact on the industry. In addition, Nebraska's SCBGP allotment has increased 789% since 2006. Farmers markets have increased 250% since 2000 and there are approximately 600 Nebraska fruit and vegetable growers listed on the Nebraska Farmers Market Online Database (http://ne.gov/go/neproduce). Nebraska leads the nation in Great Northern Bean production and potatoes are one of Nebraska's top 10 leading commodities (in order of value).	$83,100.00
Nebraska State Department of Agriculture	$822,737.48	2. Exploring the Feasibility of Vinifera Grape Production in High Tunnels in Nebraska	The University of Nebraska Viticulture Program (UNVP) will examine the practicality of growing Vinifera grapes in high tunnels for the Midwest. High tunnels allow growers to control and manipulate the environment for growing grapes to improve the quality of Vinifera grape cultivars on a consistent basis by offering protection from harsh winter conditions, late spring and early fall frosts. By doing this, growers will be able to grow and produce fruit from grapes that otherwise would not survive in our environment. High tunnels also allow the grower to regulate the amount of water that the vines receive thus helping to control the vines' vigor and disease susceptibility.	$55,555.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Nebraska State Department of Agriculture	$822,737.48	3. Potato Cyst Nematode Survey	Potato Cyst Nematodes (PCN) are destructive soil-borne nematodes, infesting feeder roots of potato plants. Females form cysts containing 200 to 600 eggs, which can stay dormant for up to 30 years while the eggs inside remain viable. Heavy infestations result in wilting, stunted growth, poor root development, and early plant death. The current U.S. distribution of pale PCN (Globodera pallida) are limited to Idaho, while golden PCN (G. rostochiensis) are only known to occur in New York. The discovery of PCN in Idaho in 2006 resulted in the immediate closing of some foreign markets to U.S. potatoes. Those markets have mostly reopened to most U.S. potatoes, but the U.S. must continue to survey for these pests to maintain pest free areas in order to keep markets open.	$35,000.00
Nebraska State Department of Agriculture	$822,737.48	4. A Weed Management Innovation for Matted-Row Strawberry Production in Nebraska	The University of Nebraska – Lincoln will enhance the competitiveness of specialty crops in Nebraska through research on novel weed management solutions for matted-row strawberry production. Results from field trials across two locations will increase grower knowledge about biobased mulches and mechanical and chemical weed management in strawberries. Strawberries are the 3rd most popular fruit in the U.S., behind only bananas and apples. In 2018, per capita consumption of strawberries was 8.3 pounds. Strawberry production in Nebraska is currently limited to 16 acres across 43 farms (USDA Census, 2017); however, many specialty crop growers in Nebraska recognize the increasing demand for fresh local strawberries and are eager to produce this crop.	$55,556.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Nebraska State Department of Agriculture	$822,737.48	5. Value-Added Product Development: Can Nebraska Dry Edible Beans Make Premium Plant-Based Yogurt	The UNL Food Processing Center will increase the utilization of dry edible beans by developing a high value-added yogurt product. The technique of making a premium plant-based yogurt with dry edible beans, and the nutrition values of developed products will be explored. The ultimate goal is to introduce dry edible beans into the fast-growing dairy alternatives market as important resources and enhance the competitiveness of these specialty crops through increasing their consumption and economic value. The dairy alternatives market is projected to grow from USD 17.3 billion in 2018 to USD 29.6 billion by 2023, at a Compound Annual Growth Rate (CAGR) of 11.4% during this period (from MarketsandMarkets™). This is attributed to the nutritional benefits offered by plant-based dairy alternatives. They offer various nutritional benefits such as reduced cholesterol levels, improved cardiovascular health, and diabetes control.	$27,778.00
Nebraska State Department of Agriculture	$822,737.48	6. Optimizing Soil and Nutrient Management to Improve Mint (Peppermint and Spearmint) Yield and Quality	The University of Nebraska Panhandle Research and Extension Center (PREC) will optimize nitrogen fertility management of mint production in western Nebraska's production environment. Replicated yield trials will be conducted under irrigation using one peppermint and one spearmint variety/clone at Scottsbluff, Nebraska. Two types of nitrogen fertilizer and four rates with 2-3 split application will be used. Data to be collected are emergence of new growth, row width, flowering, and plant height before harvest. The plots will be harvested, fresh biomass will be weighed, and sub-sample will be dried for yield (DM) estimation. Sub-sample of the dry biomass will be used for chemical analysis to determine mint oil content. Data will be analyzed, and results will be shared with the producers and industry through various extension events. Research results and educational programming will provide valuable decision-making information for growers interested in this specialty crop.	$31,378.00
Nebraska State Department of Agriculture	$822,737.48	7. Grapevine Weed & Disease Control: A Sustainable Approach	Mac's Creek Vineyards will partner with Arbor Day Foundation (dba Arbor Day Farm) to eliminate/reduce the use of chemical pesticides to control disease in vineyards, and eliminate/reduce the use of chemical herbicides to control weeds in vineyards and apple orchards. This will be accomplished by spraying the vineyards and orchards with Essential	$75,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			Oils and disseminating the results to stakeholders through grower meetings and/or field days.	
Nebraska State Department of Agriculture	$822,737.48	8. Using Ozone Technology to Reduce Pesticide Usage and Improve Food Safety in NE Small Fruit Orchards	The Arbor Day Foundation (dba Arbor Day Farm) will investigate the feasibility of eliminating/reducing chemical pesticide spraying for disease control in apple orchards via the usage of ozone technology. This will thereby become a part of the "educational story" told in order to enhance sustainability of the orchard fruit industry, while also enhancing consumer safety (to include the "Pick Your Own" programs), worker protection and the growers' stewardship of the environment.	$75,000.00
Nebraska State Department of Agriculture	$822,737.48	9. Mission to Food Aid Agencies to Promote Nebraska-Grown Pulses	The USA Dry Pea and Lentil Council (USADPLC) is the national organization representing the growers, processors, and exporters of US grown pulses (dry peas, lentil, and chickpeas). The Council will conduct an international trade mission to meet one-on-one with Food Aid Organization CEOs, purchasing managers, nutritionists, and other key personnel. This trade team will travel to Washington, D.C. and Rome, Italy. There are multiple food aid agencies in the D.C. area, and the World Food Program is based in Rome. Three Nebraska attendees would include a select group of producers, industry, and government officials selected via series of interviews. Presentations will focus on pulses as an affordable source of protein, the latest research about pulse health benefits, how increasing pulse consumption can address health concerns, and practical ways households with limited budgets can plan and prepare meals using pulses.	$35,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Nebraska State Department of Agriculture	$822,737.48	10. Refining a Method to Optimize Confection Sunflower Yield Through Pollinator-Friendly Pest Management Practices	The University of Nebraska's Panhandle Research and Extension Center (PHREC) will collaborate with local growers (phase 1 and 2) and area beekeepers (phase 2) to do on-farm testing of a trap crop tactic to manage pest and beneficial insects in production confection sunflower fields. Border rows of early flowering sunflower will intercept and concentrate migrating sunflower pests (i.e., seed weevil and sunflower moth) as they move into the field. The crop border can be easily and inexpensively managed using best bee protection tactics to prevent the pest's later movement into the field interior as it begins to bloom. Insecticides with high pest specificity and low pollinator toxicity will be used to conserve pollination services and maximize yield potential (phase 1).	$64,815.00
Nebraska State Department of Agriculture	$822,737.48	11. Chickpea Production in Nebraska: New Products for Managing Ascochyt Blight	The plant pathology program at the University of Nebraska, Panhandle REC will conduct a study at the Research and Extension Center in Scottsbluff that will test new, relatively inexpensive commercially available chemicals for their ability to reduce damage in chickpeas due to the fungal disease, Ascochyta blight, and improve yields. These products will be compared with a standard fungicide and copper product, in both disease control efficacy and costs of applications. The results will be shared with clientele (growers, consultants, and colleagues) via both research- and extension-oriented publications, commodity grower meetings, and field days.	$27,780.00
Nebraska State Department of Agriculture	$822,737.48	12. Finding Alternative Herbicides in Dry Edible Bean	The University of Nebraska will establish a series of field trials to evaluate novel herbicides and herbicide timings in dry edible beans for control of herbicide-resistant Palmer amaranth. This project will develop an herbicide program that will maximize Palmer amaranth control without the use of non-residual herbicides. These best management practices will be adopted by farmers dealing with herbicide-resistant Palmer amaranth. We will compare different preplant incorporated (PPI), pre-crop emergence (PRE), and POST application timings of residual herbicides, to see if we can develop a system of overlapping residual control of herbicide-resistant Palmer. In particular, the PRE and PPI herbicides currently used have great control of Palmer, but the herbicides degrade in the soil within four to six weeks, allowing for Palmer to emerge.	$19,800.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Nebraska State Department of Agriculture	$822,737.48	13. Developing Methodologies for Value-added Utilization of Proteins from Nebraskan Pulse Crops	The research team is consisting of a food protein chemist (Dr. Kaustav Majumder), a food engineer (Dr. Mary-Grace Danao), a bean breeder (Dr. Carlos Urrea), and an alternative crop breeder (Dr. Dipak Santra). Drs. Majumder and Danao will lead the effort and participate in developing the proposed methodologies and conducting the experiments. Drs. Urrea and Santra are the major collaborators of the grant and they will provide bean and pea samples each year for the analysis. Dr. Danao will be offering her expertise on spectral data analysis, and the development of the calibration model to access the protein quality. Dr. Majumder will oversee the project and evaluate the protein quality and establish the correlation with the spectral data. He will provide his decade long expertise to develop and optimize the processing conditions for the enhancement of protein functionality and to measure the digestibility of proteins and determine structural changes.	$32,408.00
Nebraska State Department of Agriculture	$822,737.48	14. Optimizing soil and nutrient management to improve dry edible bean yield and quality	The University of Nebraska-Lincoln Panhandle Research and Extension Center (UNL-PHREC) will evaluate nitrogen (N) fertilizer management strategy (rate and time of application) and iron (Fe) fertilizer management for improving dry edible bean quantity and quality in western Nebraska. The project will be in collaboration with Drs. Bijesh Maharjan and Carlos Urrea (UNL-PHREC) and Dr. Kaustav Majumdar (UNL Food Sci. & Technology). The 2-year (2021-2022) trial will be conducted under irrigated system at UNL-PHREC in Scottsbluff, NE. Two application timing and 4 application rates of N fertilizers and 2 Fe sources at two rates each will be evaluated to determine best practice to enhance bean yield and quality. Harvested bean will be used to measure bean yield, protein quantity (%) and quality (amino acids and bio-accessible and bio-available protein types). Data will be analyzed to identify the best N- and Fe- management practice for producing high value bean in western Nebraska.	$46,304.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Nebraska State Department of Agriculture	$822,737.48	15. Identifying Mung Bean Variety with High Yield, Quality and Disease Resistance for Western Nebraska	The University of Nebraska Panhandle Research and Extension Center (PREC) will identify mung bean varieties adaptable to western Nebraska's production environment. Replicated yield trials will be conducted using approximately 5-10 varieties in western Nebraska. PREC will collect data on emergence, flowering, plant height, maturity and seed yield. Harvested mung bean seed from the variety trials will be analyzed for seed quality (test weight, uniformity, and sprouting). Data will be analyzed, and results will be shared with the producers and industry through various extension events. Research results and educational programming will provide valuable decision-making information for growers interested in this specialty crop.	$19,836.00
Nebraska State Department of Agriculture	$822,737.48	16. Mapping Common Bacterial Blight and Common Rust Resistance Genes in Tepary Bean for Enhancing Resistance Levels in Dry Beans	The University of Nebraska Dry Bean Breeding Program will elucidate the genetic basis of resistance to common bacterial blight pv. fuscans (CBB) and common rust in tepary beans to decrease the vulnerability of dry beans through introgression of new genetic resistance sources. CBB and bean common rust are the primary disease threats to the Nebraska dry bean industry. Both pathogens are overcoming genetic resistance through the increase in diversity and mutations of aggressive variants, making it necessary to find new genetic sources of resistance. Tepary beans, a related species that shows higher levels of resistance to these pathogens, is a potential source for improving genetic resistance in dry bean. However, there is no complete genomic understanding of its resistance. Knowing the markers of resistance within the tepary bean genome will facilitate transferring those resistant genes into common beans.	$32,250.00
Nevada Department of Agriculture	$269,185.61	1. The Farm to Food Accelerator: Energizing Growth for Nevada's Female Specialty Crop Producers	The National Association of State Departments of Agriculture (NASDA) Foundation will partner with the Nevada Department of Agriculture, Oregon State University Food Innovation Center, and Union Kitchen to develop a two-year project to equip female specialty crop producers in Nevada to grow their value-added businesses. NASDA Foundation and the project team will help Nevada producers expand production of food products and enter new regional markets. The team will adapt the Women's Farm to Food Accelerator to meet the needs of Nevada producers and integrate them into the program. The Women's Accelerator is a 12-week program that equips female specialty crop	$72,485.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			producers in Oregon and Washington to expand production of their food products and enter new regional markets.	
Nevada Department of Agriculture	$269,185.61	2. Reno Garlic Fest 2021-2023	Reno Garlic Fest (RGF) will be a convivial and educational one day event featuring local farmers selling garlic, local food trucks and artisans selling garlic-based foods and items along with educational literature, activities and workshops highlighting garlic growing and cooking tips. 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 most prolific specialty crops and experience local agriculture with direct interaction.	$44,925.00
Nevada Department of Agriculture	$269,185.61	3. Nevada State Beekeepers Conference 2021 and 2022	The Mason Valley Beekeepers (MVB) is organizing the 11th and 12th Annual Nevada State Beekeepers Conference on February 26-27, 2021, and February 25-26, 2022, 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.	$21,400.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Nevada Department of Agriculture	$269,185.61	4. Assessment and feasibility of local specialty crop processing infrastructure for on-farm and shared-use facilities	Reno Food Systems will conduct a feasibility study for processing specialty crops on farm and/or in shared-use, community processing centers to increase our understanding of the challenges (and associated solutions) facing specialty crop producers when diversifying into value added products and/or medicinal herbs. We will assess the current extent of specialty crop processing infrastructure locally, including on farms and in spaces accessible to farmers (such as food hubs and rentable kitchen spaces). Based on the current extent of infrastructure and the demand for it, we will investigate options to expand the capacity of local processing infrastructure available to farmers and local artisans such as chefs and herbalists. This information will be used to create a roadmap for expanding local specialty crop processing infrastructure both on farm and throughout the local food system.	$30,000.00
Nevada Department of Agriculture	$269,185.61	5. Park Farm's Mobile Farmers Market, specialty crop production and educational programming.	Reno Food Systems (RFS) will expand production of specialty crops, educational programming and access to specialty crops by underserved communities through our Mobile Farmers Market, thereby increasing the availability, awareness and access to specialty crops while also training the next generation of specialty crop farmers in Washoe County.	$30,997.61
New Hampshire Department of Agriculture, Markets and Food	$249,761.89	Project 1: Helping Farms Reach Customers through Online Retail	The Merrimack County Conservation District will work with farmers producing specialty crops, as well as farmers' markets, within the county to connect them with an online platform for selling their products in order to mitigate the effects of the COVID-19 crisis. This will entail researching a variety of existing online platforms to ensure that each farmer is connected with one that meets their specific needs, providing technical assistance to each farm to establish on-farm processes for fulfilling online orders, and directing consumers to the platforms by marketing the availability of shopping at local farms online. Through this project, at least 8 farmers and 3 farmers' markets will be provided with the support to begin selling their products online.	$37,594.76

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Hampshire Department of Agriculture, Markets and Food	$249,761.89	Project 2: Increasing the Competitiveness of NH Specialty Crops through Business Planning	The Cheshire County Conservation District (CCCD) will work with partners to provide business planning technical assistance to specialty crop producers in NH to improve the viability of their businesses. Technical service providers will actively engage producers in this process to determine needs and where strategic investments can be made to ensure their continued profitability and the competitiveness of their products in the market. Specialty crop producers in NH have a growing demand for their products and many want to increase production and sales. This project will ensure that their business growth is informed by good planning and will lead toward improved profitability. The CCCD will incentivize producers' active participation in this project with a stipend they can use to invest into their specialty crop enterprise's identified opportunities for improved infrastructure and equipment. The Hannah Grimes Center for Entrepreneurship (HGCE) and the National Center for Appropriate Technology (NCAT) will partner with the CCCD to provide the needed business planning and technical assistance.	$43,620.00
New Hampshire Department of Agriculture, Markets and Food	$249,761.89	Project 3: Plant Something NH	The New Hampshire Plant Grower's Association (NHPGA) will enhance the competitiveness of specialty crops in New Hampshire by leveraging the Plant Something NH program to deliver educational campaigns promoting "buy local" initiative and address the marketing challenges faced by NH specialty crop growers by providing solutions to these challenges with a video education series. In addition, this project will provide the tools or skills necessary to aid specialty crop growers and retailers in developing a strategy to improve their online marketing presence will give them more control and resources to effectively compete against big box and online retailers.	$50,000.00
New Hampshire Department of Agriculture, Markets and Food	$249,761.89	Project 4: Buy New Hampshire Specialty Crops Targeted Social Media Influencer Marketing Campaign in Partnership with NH Division of Travel & Tourism	The NH Dept. of Agriculture, Markets & Food (NHDAMF) will work to increase sales of New Hampshire specialty crops through a marketing campaign that targets social media influencers and their followers. We will identify social media influencers and establish partnerships to engage audiences with content around NH specialty crop farms and products. By using Social Media Influencers to capture and share this content, the Department will gain access to a wider distribution	$100,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			channel, as well as a catalog of content that can be used and re-used across our own social channels and for future marketing efforts.	
New Jersey Department of Agriculture	$749,758.31	1. Breeding cranberry varieties for rot resistance, lowered fruit acidity; experimentation to reduce insecticide / fungicide use	The American Cranberry Growers' Association (ACGA) will research cultivars with lower fruit acidity and greater rot resistance while maintaining crop yields to increase the commercial success of NJ cranberries, to increase fruit marketability by reducing the use of fungicides and insecticides, and to develop alternative forms of pest management. The grant equipment will be used by researchers at the Rutgers University Philip E. Marucci Center for Blueberry and Cranberry Research. One incubator will be used to cross cranberry cultivars under increased fruit rot pressure to test for resistance and to assess the efficacy of new fungicides and fungicide regimes. The titrator with auto-sampler will be used to measure acidity level in the analysis of cultivars' fruit quality. The other incubator will maintain colonies of Sparganothis Fruitworm and Spotted Fireworm to develop behavior-based alternatives to pesticides, create models for more precise chemical controls, and test for fruit resistance to these pests.	$39,478.00
New Jersey Department of Agriculture	$749,758.31	2. Building Regional Wine Cluster Collaboration	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 will foster the creation of regional marketing campaigns with our wineries located in wine clusters throughout the state and our AVA regions as well as create new wine clusters through this promotional outreach.	$40,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Jersey Department of Agriculture	$749,758.31	3. Project to maximize the effectiveness of the Jersey Fresh advertising program in 2021 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.	$348,674.97
New Jersey Department of Agriculture	$749,758.31	4. Enhancing Sales of Locally Grown Produce through a Single Box Multi Produce Item Web Based Purchasing Platform for distribution directly to individuals	The Landisville Produce Co-operative, a.k.a. (LPC) will increase the sales of its grower members locally sourced fruits and vegetables through a new system of direct customer ordering of a single box quantity consisting of multiple fruit and vegetable commodities via a web site ordering portal. The system will allow individual persons to place orders for a variety of New Jersey grown produce supplied by the Co-op's grower members. These produce items will then be subjugated into a single carton box and allocated for either pick-up or shipment via Doordash, Grubhub, or other distribution vehicles directly to consumers.	$39,520.00
New Jersey Department of Agriculture	$749,758.31	5. Advertising Jersey Fresh Blueberries – 2021	New Jersey remains in the nation's top growers for blueberry production. In 2018, New Jersey blueberry growers produced over 38 million pounds of blueberries at a total value of ~$53 million. Each year, acreage devoted to cultivated blueberries continues to increase, both domestically and internationally. This increase in competition has made it necessary for the New Jersey Blueberry Growers Association to find ways to maintain existing market share, as well as increase demand in new markets. We believe that given our resources, an aggressive billboard campaign would maximize our assets most efficiently and enable us to reach millions of consumers throughout our marketing area.	$30,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Jersey Department of Agriculture	$749,758.31	6. Consumer and Industry Advertising/Promotion of the “Jersey Grown” brand	The nursery/greenhouse/sod industry continues to be the largest agricultural commodity in New Jersey and is the fifth largest in the nation. According to the 2017 Census of Agriculture, the nursery, greenhouse, floriculture and sod industry generated sales at almost $500 million, an increase of $93 million from the previous census. New Jersey has also moved up to rank fifth in the nation in nursery stock sales. Despite the array of plants grown in New Jersey, which are more convenient and better adapted to our state and surrounding regions, consumers and retail sales outlets continue to look beyond New Jersey to source good quality nursery plants. The New Jersey Nursery & Landscape Association would like to apply for a grant to execute a multi-level marketing plan that will be targeted at both re-wholesale, landscape and retail outlets, as well as at the end consumer to drive demand towards locally-grown nursery and greenhouse plants.	$24,490.61
New Jersey Department of Agriculture	$749,758.31	7. Marketing Jersey Fresh and Local Peaches	For the past 69 years, the New Jersey Peach Promotion Council (NJPPC) has conducted successful and changing promotional programs for the orderly marketing of the New Jersey peach crop. Our success in recent years has been in promoting the quality and availability of locally grown, nutritious and delicious Jersey Fresh peaches; compiling the NJ Peach Calendar and distributing it to consumers retail, grower retailers and shippers, institutional and wholesale buyers, allied industry; planning and staging various media events; consumer and produce merchandising contests, coordinating retail promotional events; providing education and information to consumers, buyers, and the media via print advertising, website, Facebook and other social media information, and personal contacts and via audio and video methodology; and conducting new peach variety and other product and handling research.	$30,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Jersey Department of Agriculture	$749,758.31	8. Jersey Fresh Rx" Fruit and Vegetable Prescription: A Best Practices Guide to Local and Sustainable	Rutgers Cooperative Extension's Family and Community Health Sciences (FCHS) department seeks to create a best practice guide for a Prescription Fruit and Vegetable program, "Jersey Fresh Rx" that emphasizes New Jersey specialty crop consumption and sales. FCHS promotes health and wellness through education, research and collaboration with outreach in food, nutrition, and healthy lifestyles. Fruit and vegetable prescription plans were established to decrease the incident of chronic disease utilizing medical professionals to write prescriptions for vegetables and fruits to increase consumption whereby reducing the incidence of chronic disease. Implementation of programs nationally have lacked sustainability and accessibility which this study will focus on to create a practical model of implementation. In New Jersey the need for increased vegetable and fruit consumption is supported by evidence from the Chronic Disease Centers that determined 61% of state residents were overweight or obese in 2018.	$40,000.00
New Jersey Department of Agriculture	$749,758.31	9. Extend and Maximize Postharvest Quality of Strawberry: Creating Controlled Atmosphere Storage in a Bag	Rutgers-The State University of NJ will extend and maximize the postharvest quality of strawberries by demonstrating the reduction in postharvest disease incidence and over-ripening with the addition of a carbon dioxide generating sachet to fruit clamshell packages. The results will be disseminated through grower meetings, fact sheets, and a video teaching how to implement the technology.	$39,586.00
New Jersey Department of Agriculture	$749,758.31	10. Reducing Honeybee Losses During Blueberry Pollination Services	Rutgers, The State University of New Jersey in collaboration with the New Jersey Beekeepers Association, regional commercial beekeepers, the NJ blueberry industry and associated growers, and the NJ Blueberry Advisory Council, will determine the contributing causes to the bee decline experienced by beekeepers during commercial blueberry pollination services. We will identify alternative management practices that can be used by both beekeepers and growers to improve bee health. We will formulate new and improved recommendations that address both the needs of blueberry growers and beekeepers. This work will build on an existing SCBGP project now coming to an end. In the existing project we quantified bee losses that are occurring during blueberry pollination, identified in-hive residues, and started to quantify several pesticides that may be contributing to the problem.	$37,018.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Jersey Department of Agriculture	$749,758.31	11. Identification and management of Phytophthora species limiting conifer production in nurseries and Christmas tree farms	Rutgers University Cooperative Extension agents Timothy Waller and Bill Errickson will be cooperating with nurseries to identify to a species level and mitigate the impacts of Phytophthora spp. that limit Christmas tree and other conifers' production throughout the state of New Jersey. The project will support a comprehensive and innovative disease management program with the aim of providing recommendations on site selection and soil considerations that influence pathogen development, identifying sources of Phytophthora spp. contamination and avoidance thereof, resistant variety (germplasm) selection, and conventional, biological, and cultural disease management applications.	$36,901.00
New Mexico Department of Agriculture	$584,340.81	1. Enhancing the Visibility and Success of New Mexico-Grown Specialty Cut Flowers	The New Mexico Flower Cooperative will form a network to support and expand cut flower production, sales, and distribution throughout the state of New Mexico. It will add profitable income streams for participating New Mexico farmers and engage in marketing and outreach to raise the profile of New Mexico grown flowers.	$111,781.00
New Mexico Department of Agriculture	$584,340.81	2. Increase Hop productivity in New Mexico	The New Mexico Hop Growers Association (NMGHA) will help to increase productivity of hops in New Mexico by providing training, consultation, marketing, materials, seasonal labor and transportation services to participating hop fields throughout New Mexico. Currently, there are 16.5 acres under trellis in New Mexico. In 2019, 1,470 pounds of hops were available to the New Mexico Craft Brewers. The average yield of all farms was 90 pounds. The expected yield is 1200-1800 pounds per acre, depending on variety. NMGHA seeks to increase hop productivity by increasing yield and acreage by 1) Training 2) Providing consulting services to the hop growers to increase production 3) Purchasing bales of coir and W Clips for annual stringing to reduce costs by buying in bulk 4) Purchasing mini-weathers stations for each participating farm 5) Marketing local hops to Craft Brewers 6) Providing and transporting labor to fields for stringing and harvesting	$42,350.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Mexico Department of Agriculture	$584,340.81	3. Vetcorps Veteran Farmers Beekeeping and Extended Season Crops Program	Not Forgotten Outreach trains VetCorps members and community members to perform the maintenance of honeybee colonies and hives, in order to collect their honey and other products that the hive produces (including beeswax, propolis, pollen), while protecting and improving pollinator health. Additionally, VetCorps will be trained to grow and harvest extended season crops through hydroponics, hoop houses, and low tunnel row crop systems. The Not Forgotten Outreach's VetCorps program provides Veterans, Military Families, and Gold Star Families (survivors of fallen Heroes) with dirt therapy, business and agriculture education helping them become successful farmers. VetCorps members are beginning farmers and ranchers interested in scaling up their agriculture operations. All produce from the project will be marketed and distributed to local school districts, restaurants, and community	$92,922.92
New Mexico Department of Agriculture	$584,340.81	4. Culinary – Food and Beverage Industry Access and Awareness	The New Mexico Department of Agriculture (NMDA) will focus its efforts by educating food and beverage culinary professionals about New Mexico specialty crops. The project entails conducting cooking demonstrations, tastings, and accessibility of New Mexico specialty crops, specifically green chile and pecans at the Culinary Institute of America's World of Flavor – International – Conference and Festival. The conference is widely acknowledged as our country's most influential and professional forum on world cuisines, food cultures, and flavor trends. The attendees are 600 leading chefs, foodservice executives, global cuisine experts, and influential foodservice professionals.	$21,505.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Mexico Department of Agriculture	$584,340.81	5. Mitigation of alternate bearing of New Mexico Pecan Trees: Pollination and fertilization of pecans	Pecans are among the largest economic contributors to New Mexico's agricultural economy with production exceeding $130 million annually. One of the most important horticultural constraints for profitable pecan production in New Mexico is alternate bearing, which is the annual cycling of pecan trees between heavy and light crop load. Alternate bearing is caused by fluctuations in the number of female flowers produced in tree canopies. Flower development (of both female flowers and male flowers) in pecan trees occurs when vegetative tissues transition to flowers due genetic signals that occur prior to flowers being visible. In our previous efforts we obtained better resolution for timing of alternate bearing mitigation approaches and looked at the impact that lack of water has on pecan tree growth and flower induction. As water is becoming more limiting it is essential to understand the effect that lack of water will have on pecan nut production. For successful nut production it is essential that pistillate flowers are formed and that these flowers are successfully fertilized by the pollen (sperm). The pollen parent genetics directly contributes to the quality/size/quantity of the nuts produced and thus the dynamics of pollen viability, growth of the pollen tube for fertilization is important. It is not known to what degree pollination impacts the season to season fluctuations in nut yield and quality. In this study, we plan to evaluate the effects of lack of water on flower fertilization in pecan that will directly relate to nut yields for growers. In this study we will use molecular and microscopy-based techniques to understand the impact of deficit irrigation on the impact timing of pollinizer shed, the viability of pollen, the stigmatic receptivity, growth of pollen tube, ovule receptivity followed by successful fertilization. The data from these studies will allow us to determine the impacts that limiting water usage will have on pecan nut production.	$103,647.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Mexico Department of Agriculture	$584,340.81	6. Characterization, genotyping and uses of jujube cultivars/germplasm in New Mexico	Most jujube cultivars in the United States are causally named without detailed information except those directly imported cultivars. Even imported cultivars, may be renamed by nurseries in different ways. Synonyms are quite common for jujube cultivars in the U.S. Growers are confused with cultivar selections. To make the jujube cultivars/germplasm serve the jujube industry better, those jujube cultivar synonyms have to be identified and made known to the public. With help from USDA ARS at Beltsville, we will be genotyping jujube cultivars/germplasm from New Mexico, El Paso, Texas and jujube collections in a nursery in Kentucky. We will identify the synonymous cultivars and classify the relationship of those cultivars/germplasm including some wild jujube trees. For some of those that cannot be fully separated with genotyping like mutation cultivars, a graduate student will collect morphological data to further separated them. When this proposed research is complete and uploaded to the NMSU jujube website, jujube growers/researcher/extension personnel nationwide or worldwide can have access to it.	$63,888.68
New Mexico Department of Agriculture	$584,340.81	7. The Specialty-Cut Flower Economy in New Mexico: Opportunities and Challenges	The University of New Mexico will research and analyze the specialty-cut flower market in New Mexico and develop recommendations for policy initiatives designed to foster the market at the local and state level.	$22,651.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Mexico Department of Agriculture	$584,340.81	8. Evaluation of a Bacterial Surrogate for Salmonella Inactivation during Red Chile Drying	The NMSU Food Safety Laboratory plans to continue evaluations of the processes used during the manufacture of dried red chile peppers and demonstrate their efficacy at reducing levels of Salmonella. We will continue the studies conducted in AMS Agreement Number: 16SCBGPNM0011 to ensure that the heat treatments required ensuring that a safe, pathogen-free product is produced. The NMSU Food Safety Laboratory staff has visited chile drying operations and collected processing information including moisture levels of incoming and finished products and the time and temperatures required for drying. We conducted in-lab heating experiments with red chile peppers inoculated with Salmonella and showed that the drying procedures used in industry should be able to reduce the levels by 5 log cycles. We also conducted drying experiments with a non-pathogenic “surrogate” organism (Enterococcus faecium NRRL B-2354) and found that it was less heat sensitive than Salmonella but could be used as a surrogate to demonstrate heat inactivation of the pathogen during drying. The bacterial surrogate organism is harmless and was inoculated onto peppers and subsequently dried in commercial processing facilities. We plan to conduct additional in-plant inactivation studies with E. faecium and additional studies in the lab to collect more data. The results of these commercial inactivation studies will provide the processors with data that validates their drying procedure for inactivation of Salmonella. We will work with processors to optimize their process if required.	$37,896.95

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New Mexico Department of Agriculture	$584,340.81	9. Production of specialty gourmet and medicinal mushrooms using local agricultural and industrial waste products and local forestry stocks.	Trifecta Multiponics LLC, in partnership with Santa Fe Community College, will produce specialty gourmet and medicinal mushrooms for sale to regional markets by utilizing waste produced by paper manufacturing and processing from Roses Southwest Papers and McKinley Paper Mill, beverage manufacturing waste from Villa Myriam Coffee Roasters, and forestry/timber waste from Walatowa Timber and Metro Millworks. These businesses have already agreed to provide waste materials for the project. Trifecta Multiponics LLC will provide equipment specifically designed to facilitate this task (ribbon mixer, conveyors, bagging machine, and sterilizer). Timber and green wastes will be wetted, mixed with waste-derived cellulose and nitrogen supplements and treated with Ophiostoma piliferum as a predigestion and resin removal agent. The material will then be chemically or thermally pasteurized and inoculated with Oyster, Lion's Mane, Reishi, and Shiitake mushroom spawn. Inoculated material will be fruited in temperature-and-humidity controlled grow rooms to produce specialty mushrooms for market. The scope of the project will also include educating local consumers on the usage and benefits of gourmet and medicinal mushrooms and conduct mushroom cultivation workshops. Finally, at the end of the project, successful growing methods and findings of the project will be written up and disseminated to the public and to farmers interested in growing mushrooms.	$40,500.00
New York State Department of Agriculture and Markets	$1,230,827.40	Project 1 - PGR Programs and Pre-Harvest Disease Management of Post-Harvest Fruit Finish Disorders and Decay	Cornell University will develop practical chemical management programs for use in apple production for improved control of the fruit finish disorder scarf skin. They will also investigate the putative link between the apple fruit physiological disorders of lenticel breakdown and bitter bit with post-harvest diseases such as black rot. These results will be disseminated to stakeholders statewide through grower meetings, field days, and grower-focused publications.	$92,034.00
New York State Department of Agriculture and Markets	$1,230,827.40	Project 2 - Designer Apple Rootstocks for NY State Apple Growers	This Cornell University led project will further characterize the new Geneva apple rootstocks for mineral nutrient profile and cold hardiness and then develop an online decision support tool which will allow growers to input their soil type, location in the state and scion variety and receive rootstock recommendations that will result in an orchard that grows well enough in the first 2-3 years to fill the allotted space,	$92,573.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			will have high yield and good fruit quality and will have proper mineral nutrient concentrations for good fruit storage potential.	
New York State Department of Agriculture and Markets	$1,230,827.40	Project 3 - Advancing Downy Mildew Resistance Management for NY Grape Growers	Cornell University will quantify and mitigate the spread of carboxylic acid amide (CAA) resistant grapevine downy mildew in New York using a technology driven approach and disseminate results to stakeholders through grower meetings and field days. There is a great need for innovative research and extension to help growers address the concern that CAA-resistance represents to NY grape production. In collaboration with Michigan State University and Cornell Cooperative Extension, our objectives are to advance CAA-resistance management and develop non-destructive fungicide resistance monitoring with hyperspectral sensors.	$92,582.00
New York State Department of Agriculture and Markets	$1,230,827.40	Project 4 - Promoting Pollinators in New York Berry Crops in the Era of Spotted-Wing Drosophila	Cornell University entomologists will mitigate the negative effects of insecticide control of spotted-wing drosophila (SWD) on pollinators and other beneficial arthropods by evaluating the efficacy and environmental impact of applying insecticides below the canopy of susceptible berry crops. To address this concern, we will work on research farms and with raspberry growers in New York State to study the effects of ground applications a) on SWD infestation, b) pollinator efficacy, abundance, and diversity, and c) on crop yield, quality, and management costs. Using those data, we will work with Cornell Cooperative Extension to deliver this information to growers and re-evaluate our best management practices for SWD control in small fruit. Expected outcomes are improved profits for growers through reductions in the volume of insecticidal product required for sufficient management, and increased yield associated with significant reductions in non-target effects of insecticides. We will track adoption of these new practices in the state through surveys and gauge the success of our program at improving farm sustainability for New York berry growers.	$99,341.00
New York State Department of	$1,230,827.40	Project 5 - Biological Control for Managing the	Cornell Agricultural Extension proposes to evaluate the efficacy of biological control nematodes for CPB and wireworm management in	$92,541.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Agriculture and Markets		Most Serious Pests of Potato in Conventional and Organic Production Systems	potato. The project will involve 1) evaluating levels of CPB and wireworm control in potato grown in fields treated with biological control nematodes or not treated, and 2) disseminating project results to conventional and organic potato growers at meetings, through newsletters and via on-line. Expected outcomes for NY potato growers will be an interest in using biological control nematodes to manage CPB and wireworms on their farms, which should result in management of insecticide-resistant populations, reductions in insecticide use, and an increase in profits.	
New York State Department of Agriculture and Markets	$1,230,827.40	Project 6 - Planning for Future Pests: Updating Integrated Pest Management Resources for Nursery	The 2017 Census of Agriculture lists 527 nursery operations and 770 producers of Christmas trees and short-term woody crops in New York State. When surveyed, these growers noted that disease, insect and weed identification and resistant plant species and cultivars were the top 2 topics for information they would like made available. New York State Integrated Pest Management has resources on the web or in hard copy, but they need to be evaluated for current information and ease of availability to make them useful for growers. With the assistance of a grower advisory committee, we will review and update our existing materials or create new ones that ornamentals growers can use to improve their on-farm decision making on pest management. Once the resources are available, we will use active learning presentations at grower organization meetings to teach growers how to find and use them. Electronic methods of reaching growers will allow us to broaden the reach of this project.	$52,811.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New York State Department of Agriculture and Markets	$1,230,827.40	Project 7 - Advancing Thrips Management in Onion Using a New Sampling Plan and Digital Application	Onion thrips are a major pest and its damage reduces onion yields through feeding on leaves and transmitting plant pathogens. Cornell Agricultural Extension proposes to implement a research-based sampling plan for thrips and a digital application that includes the sampling plan, past spray records and the thrips management guidelines, which will reduce sampling time needed for making accurate control decisions, thereby increasing adoption. The project will involve 1) sampling thrips in commercial onion fields to develop and implement a new sampling plan and digital application of the sampling plan, spray records and the guidelines, 2) disseminating information to growers and scouts on how to use the sampling plan and digital application at workshops and regional meetings, and 3) evaluating time saved using the new sampling plan and digital application. We expect that growers will adopt the sampling plan and digital application, resulting in significant reductions in time needed to sample fields and make control decisions. Consequently, these advancements will lead to substantial savings and profits for onion growers.	$92,274.00
New York State Department of Agriculture and Markets	$1,230,827.40	Project 8 - New York Agricultural: Labor in Transition	Cornell University will investigate the effects of dramatic changes in the farm labor environment and how specialty crop farms can successfully adapt. We will disseminate research-based methods to improve human resource management, increase labor efficiency, adopt labor-saving technology, and achieve overall farm sustainability. Labor is the largest expense and greatest challenge for specialty crop farms. Farms struggle to secure enough labor to carry out operations and meet market opportunities profitably. Recent changes in labor availability, regulations, and in societal expectations about farm worker well-being make improvements in farm human resource management critical to farm sustainability.	$193,201.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
New York State Department of Agriculture and Markets	$1,230,827.40	Project 9 - Marketing and Promotion of New York State Specialty Crops	New York State Department of Agriculture and Markets (NYSDAM) will continue a consumer-facing marketing campaign to increase the competitiveness of specialty crops by increasing consumer awareness and demand for New York grown specialty crops. Marketing activities will be multi-channel, including production of promotional materials for use at point-of-sale locations, promotion at tradeshows and strategic advertisements in print, radio and digital media. New activities this year include development of a geo-targeted digital advertising campaign (pop-under and/or banner ads) and production of a short (approximately 15 second video) to promote NYS specialty crops in targeted regions of the State. Effectiveness of the campaign will be measured by number of impressions, video views, video completion rates, clicks, and consumer surveys.	$239,124.00
North Carolina Department of Agriculture and Consumer Services	$1,260,229.00	Bianchetto Truffle Production by Small Farmers	North Carolina A&T State University will recruit underserved small and minority farmers, including new and beginning farmers, and assist them in establishing one-acre plots of Bianchetto truffle orchards in five different counties across North Carolina.	$100,000.00
North Carolina Department of Agriculture and Consumer Services	$1,260,229.00	Breeding Tomatoes for Spotted Wilt Resistance	The North Carolina State University will incorporate polygenic host resistance into NCSU fresh market tomato hybrids, for large scale commercial production and specialty types of different sizes, shapes, and colors with multiple disease resistance and outstanding flavor, in order to mitigate the damage caused by tomato spotted wilt virus (TSWV). Tomato spotted wilt, spread by thrips, is a widespread, destructive disease in North Carolina, especially in the piedmont and coastal plain regions.	$100,000.00
North Carolina Department of Agriculture and Consumer Services	$1,260,229.00	Continuing Expansion of NC Potato Markets	The North Carolina Potato Association (NCPA) will continue to build market opportunities for its members/growers in this project through potato marketing/promotions. Marketing funds are requested to promote NC potatoes at trade shows, annual meetings, through media, and website to corporate potato buyers/decision makers in the US and Canada, and to consumers and students. By supporting our marketing efforts, we will enhance competitiveness of our potatoes with storage crop potatoes from other growing regions and enhance consumer education of potato nutrition.	$54,836.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Carolina Department of Agriculture and Consumer Services	$1,260,229.00	Controlling Root-Knot Nematode in Sweet potatoes	The North Carolina Sweet Potato Commission Foundation seeks to assist its growers with management and control of the destructive Guava Root-Knot Nematode (GRKN; Meloidogyne enterolobii) through offering a cost-share program to offset the expense of DNA-molecular assays, the only diagnostic tool available for identifying the presence of GRKN. The cost-share program will encourage the growers to incorporate sound agronomic practices that will reduce the cost of fumigants by only treating infested soils. Appropriate management of GRKN will protect yields and markets, assist NC sweet potato growers with maintaining industry dominance, promote improved soil heath, and contribute to grower profitability.	175,00
North Carolina Department of Agriculture and Consumer Services	$1,260,229.00	Drone Use to Improve NC Pumpkin Production	Pumpkin is an emerging specialty crop in North Carolina (NC), ranked fourth in national production in 2016 and was valued at $23.1 million. We propose research to improve pumpkin production efficiency so that growers are less likely to lose money growing this crop. Utilization of 21st century drone technology could improve pumpkin production efficiencies. To take advantage of drone technology, we propose to use ground truth to align digital recordings with the drone in the following applications.	$75,000.00
North Carolina Department of Agriculture and Consumer Services	$1,260,229.00	Genome Editing for Superior Christmas Trees	This project will be a collaboration between the Forest Biotechnology Group and the Christmas Tree Genetics Program in the Department of Forestry and Environmental Resources at North Carolina State University. Our goal is to develop novel CRISPR-based genome editing technology that will accelerate the genetic improvement of Fraser fir. The proposed technology would enable the rapid production of new genotypes of Christmas tree edited for traits with improved ecological and economic value including disease tolerance, aroma, and post-harvest needle retention.	$145,728.00
North Carolina Department of Agriculture and Consumer Services	$1,260,229.00	Improved Management of Primocane-Fruiting Blackberry	The North Carolina State University will address current limitations in yield potential and disease management of primocane-fruiting blackberry. We hypothesize these limitations can be overcome by optimization of cane and disease management strategies.	$100,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Carolina Department of Agriculture and Consumer Services	$1,260,229.00	Management of Grape Trunk Diseases	North Carolina State University (NCSU) will mitigate the spread of grapevine trunk diseases (GTD) in North Carolina (NC) by investigating management strategies and developing identification and training services for farmers and extension agents in NC. If unmanaged or improperly managed, GTDs can lead to die-back and die-off in European-style wine-grapes (Vitis vinifera and French American hybrids) as well as in muscadines (Vitis rotundifolia). GTD associated pathogens spread through rain splash into open wounds (pruning, physical damage, cold damage) of perennial wood and disease symptoms can be observed as soon as the same year of infection until several years after infection.	$100,000.00
North Carolina Department of Agriculture and Consumer Services	$1,260,229.00	Managing European Pepper Moth in Nurseries	This project is a collaboration between North Carolina State University Department of Entomology and Plant Pathology, NC Extension Service, and cooperating nurseries to develop Integrated Pest Management tactics to reduce the growing economic impact of European pepper moth a new invasive pest. We will document the life cycle, plant preferences, and insecticide efficacy in different climate regions of NC to develop monitoring and scouting procedures and effective insecticide application methods. Results will be disseminated to growers, extension professionals, and other stakeholders through web resources, extension workshops, and national print publications.	$125,000.00
North Carolina Department of Agriculture and Consumer Services	$1,260,229.00	Micropropagation of disease-free hazelnut truffle seedlings	North Carolina A&T State University will develop in vitro micropropagation protocol for eastern blight resistant hazelnut (EBRH) and test them for truffle mycorrhized seedling production. Hazelnut is one of the host plants to Bianchetto truffles (Tuber borchii). Native hazelnut trees are susceptible to eastern blight disease and cause huge economic loss to farmers.	$70,000.00
North Carolina Department of Agriculture and Consumer Services	$1,260,229.00	North Carolina Sod Brand Awareness Campaign	The North Carolina Sod Producers Association will produce a series of commercials and do-it-yourself (DIY) sod installation and management videos. Both series will be promoted through digital marketing to expand the reach of the North Carolina sod brand and effectively increase the industry demand and sales of North Carolina turfgrass sod.	$50,300.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Carolina Department of Agriculture and Consumer Services	$1,260,229.00	Spotted Lanternfly: A Threat to North Carolina Agriculture	The North Carolina Department of Agriculture & Consumer Services Plant Industry Division will implement surveys, develop and prepare statewide treatment plans, implement public outreach, and work with North Carolina's wine grape and Christmas tree industries to safeguard them from the devastating impacts spotted lanternfly will have on their commodities.	$100,000.00
North Dakota Department of Agriculture	$3,286,945.21	Adaptive Management Response to Extreme Climatic Swings for North Dakota and Wine Industry	North Dakota State University will establish an agreement relationship with the State Department of Agriculture to lead and execute the project to evaluate grapevine acclimation, periderm accumulation, and mid-winter cold-hardiness following in-season foliar application of critical nutrients. Supplementary evaluation of grapevine fruit quality following in-season foliar application of foliar nutrients and evaluation of grapevine acclimation and periderm accumulation in a greenhouse environment will be conducted to support physiological results from field studies. Dormancy acclimation and cold hardiness are the most limiting factors for wine grape production in North Dakota. Dormancy acclimation is a biological process that requires carbohydrate reserves to drive the various biochemical processes and to synthesize chemical compounds that act as anti-freeze inside the cells. Thus, like the nutritional research on woody fruit trees, this research will determine the best practices for grapevine adaptive management responses to extreme climatic swings. Results from this research will be disseminated to stakeholders through field days, electronic summaries and annual meetings.	$89,870.00
North Dakota Department of Agriculture	$3,286,945.21	Advancing Ascochyta Blight Detection in Pulse Crops through Molecular Diagnostics	In collaboration with the North Dakota State Seed Department, the National Agricultural Genotyping Center will develop and validate a new diagnostic test for increased throughput and detection sensitivity for Ascochyta blight during annual seed lot testing of lentils, field peas, chickpeas, and fava beans. The data generated from this project will provide new, more sensitive assays for Ascochyta blight to help inform pulse crop growers and seed companies for the disease potential of their seed stocks.	$338,962.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	$3,286,945.21	Advancing Seed-borne Anthracnose Diagnostics in Dry Edible Beans through Lateral Flow Technology	The National Agricultural Genotyping Center (NAGC), in collaboration with the North Dakota State Seed Department (NDSSD), propose to develop the first PCR-enabled LFD test for anthracnose in dry edible beans. Importantly, this collaborative project will act as propellant to fuel more interest in the seed testing industry for molecular diagnostics. Major advances in the technology over the last few years have made it easier for laboratories to implement more diagnostics that do not rely on visual or symptom-based methods. One of NAGC's goals is to progress diagnostic technology in agriculture towards molecular-based methods. By incorporating LFD tests for seed-borne disease, NDSSD will not only provide more sensitive measures of disease potential for the seed certification program, but also potentially help North Dakota seed producers build up a market for their seed, which is currently dominated by western grown seed that claims to be disease free.	$157,594.00
North Dakota Department of Agriculture	$3,286,945.21	Analysis of Genetic Variation for Salinity Enhancement in Dry Pea	High soil salinity is a major obstacle for pea production in North Dakota. One of the most economically effective methods to reduce stress damage is use of tolerant plants; however, limited information is available on the genetic variations of salinity tolerance in dry pea. North Dakota State University will conduct this research to determine the phenotypic responses to salinity stress in pea germplasm including the materials from NDSU breeding program and USDA collections and to explore DNA- and gene-level knowledge assisting development of salinity tolerance in dry pea. This project will help (1) quantify genetic diversity of salinity tolerance in pea germplasm to identify parental/advanced lines with high salinity tolerance and (2) identify markers/genes associated with salinity tolerance to improve breeding efficiency. Furthermore, planting pea in salt-affected soils can help increase crop diversity, contributing to the sustainability of agriculture in North Dakota. The results will be disseminated to growers and specialty crop stakeholders through NDSU Extension publications and field days, professional meetings, direct visits with growers, peer-reviewed publications, and class lectures.	$166,505.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	$3,286,945.21	Bridging the Technical Gaps to Increase Profitability of Dry Bean Production in North Dakota	North Dakota State University will address critical needs for dry bean to be utilized as functional food ingredients in the food industry, which can directly help increase the markets and profitability of dry bean grown in North Dakota (ND). The objective of this project is to produce the basic technical data for all commercially available dry bean (pinto, navy, small red, black, pink, light red, dark red kidney, white kidney, great northern, and cranberry bean) grown in ND. To accomplish the goal and bridge the gaps, the following tasks will be completed at NDSU laboratories: i) physical properties of whole seed flours prepared by different milling; ii) chemical composition, nutritional minerals, and flavor analysis of whole seed flours; iii) determination the functionality (e.g., gelatinization, foaming, emulsification, gelling of starch, and proteins; and iv) dissemination of technical data through conference, field day, work shop, webpage, and publications and measuring the impacts. The results of the proposed study could be used to develop new nutrients enriched dry bean type with premium functionality, develop nutrition/functionality evidence-based marketing strategies, and position ND-grown dry bean as a preferred source for functional food ingredients.	$137,077.00
North Dakota Department of Agriculture	$3,286,945.21	Defining Bulking Rate of Dakota Russet, Bannock Russet and Altura Potato Tubers	North Dakota State University will develop improved grower recommendations and increase economic return by determining bulking rate of newly released Dakota Russet and two long-season russet potatoes, Bannock Russet and Alturas. Harvest timing established for commonly grown Russet Burbank is currently used for all russet-type potatoes, but bulking rate can vary drastically across cultivars. The purpose of this study is to understand the effects of planting dates on the develop of bulking rates and to define Verticillium dahlia accumulation of Dakota Russet, Bannock Russet and Alturas. This could potentially save potato growers millions of dollars by harvesting earlier and not losing potatoes to frost, saturated soils or poor quality. The objectives are to (1) determine the effects planting date on emergence, early growth and canopy development (2) define bulking rates and Verticillium dahlia accumulation of Dakota Russet, Bannock Russet and Alturas to determine ideal harvest time and (3) Improve management and maximize the yield of these cultivars and increase the	$171,689.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			sustainability of potato production by disseminating this information to potato growers at field days, winter meetings, social media and other outlets.	
North Dakota Department of Agriculture	$3,286,945.21	Educating 4th Graders on Living Agriculture	The North Dakota Department of Agriculture (NDDA) through the Agriculture in the Classroom program will create seed starter kits, farmer and produce seller interview videos and livestreams that can be used by fourth grade teachers to educate their students on the specialty crops grown in North Dakota. The first year of the grant period will feature the three sisters garden crops of corn, squash, and beans. NDDA staff will travel to a farm growing those crops together and interview the farmer to provide either video footage or a live stream of the interview to the classrooms that sign up. This format will provide students with an opportunity to meet the real people who grow and sell the foods they eat. The second year will be a similar format but feature tomatoes, cucumbers, and pumpkins. The teachers will have the option of using any combination of the resources supplied to customize the classroom experience. The immediate beneficiaries of this project are the teachers and students. Farmers who grow corn, beans, squash, pumpkins, tomatoes, and cucumbers will benefit from students sharing the information about specialty crops with their parents.	$64,629.40
North Dakota Department of Agriculture	$3,286,945.21	Emerald Ash Borer / Japanese Beetle Survey	Japanese beetles (Popillia japonica) and emerald ash borer (Agrilis planipennis) have the potential to cause harm to nursery and horticultural crops (specialty crops produced by nursery/greenhouse producers and sold to the public) in North Dakota. Japanese beetle is not widely established in North Dakota, and this project will help to address the need to verify occurrence and spread of Japanese beetle. Emerald ash borer has not yet been found in North Dakota. In 2019 North Dakota Department of Agriculture licensed 283 nurseries. Each year ND nurseries ship approximately 100,000 trees to Canada, and even more are sent to other states. The establishment of either insect could prohibit or restrict all nursery stock shipments from North Dakota to Canada and to states protected by quarantines. This project will help to determine if the insects occur, the extent of spread of the pest, attempt to determine if the beetles overwintered or were introduced	$60,283.39

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			and thus verifying the status of the insects in North Dakota. Beneficiaries of the project would be nursery industry including but not limited to greenhouses, landscapers, garden centers, nursery stock growers and other stakeholders in the horticulture industry as well as the general public.	
North Dakota Department of Agriculture	$3,286,945.21	Enhancing Rust Resistance in Confection Sunflower Production Through Next-Generation Technologies	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. Project deliverables include release of multi-disease resistant lines and 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.	$123,947.01
North Dakota Department of Agriculture	$3,286,945.21	Enhancing Sustainable Raspberry Production in North Dakota through Non-Chemical Control of Spotted Wing Drosophila	North Dakota State University will explore non-chemical strategies, including promoting early fruit ripening, using plastic mulching, and modifying trellis system, to manage an invasive fruit fly, spotted wing Drosophila (SWD), for sustainable production of raspberry in North Dakota. The project will investigate the effect of the low tunnel structure and plastic mulch on promoting early fruit ripening to avoid SWD damage. The effects of plastic mulch color and trellis training system on SWD control in the open field will also be investigated. The beneficiaries of this project are current and future raspberry producers and individual raspberry growers in North Dakota. The results will be disseminated to growers and stakeholders interested in raspberry or other small fruit production through NDSU Extension Service field days and spring garden meetings, professional meetings, and direct visits with growers.	$71,174.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	$3,286,945.21	Field to Fork: Increasing Knowledge and Consumption of Pulse Crops	North Dakota State University Extension specialists/staff from at least 30 counties and external partners, including the Northern Pulse Growers Association, farmers and other stakeholders, will work together to enhance knowledge and consumption of pulse crops from field to fork. This project will build upon two successful specialty crop projects and will focus efforts on chickpeas, peas and lentils. It addresses three priorities of the North Dakota Department of Agriculture related to enhancing the competitiveness of specialty crops through 1) increasing child and adult nutrition knowledge and consumption of specialty crops consumption; 2) investing in specialty crop research, and 3) enhancing food safety from field to fork. The project will do a needs assessment of professionals and consumers, include surveys and interviews, with the goal of creating new educational materials related to pulse crops targeting both youth and adult audiences. Through the development of materials such as online modules, fact sheets, tested recipes, information releases, workshops and presentations, participants will increase their knowledge of specialty crops.	$68,294.00
North Dakota Department of Agriculture	$3,286,945.21	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 additional potato cultivars used in the region to validate their resistance reactions to the stubby root nematode Paratrichodorus allius and to identify potatoes with resistance to dagger nematode that is present in potato fields in North Dakota, and develop novel recombinase polymerase amplification assays to detect P. allius from single nematodes and field soil DNA extracts. Results of the proposed research will help understand resistance or susceptibility of additional potato cultivars to the stubby root nematode and dagger nematode populations in North Dakota and improve the stubby root nematode detection efficiency and capacity in infested fields. This information is important to help growers preform risk assessment using an efficient diagnostic tool and select the validated resistant cultivars for controlling the nematode diseases to increase potato yield and quality.	$99,922.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	$3,286,945.21	Improving Nitrogen Fixation in Chickpeas	North Dakota State University will improve nitrogen fixation in chickpeas by developing research-based recommendations for seed applied fungicides and fertilization. Isolates of rhizobia collected in North Dakota will also be screened for improved nitrogen fixation compared with inoculant strains. Results will be disseminated through peer reviewed publication, grower meetings and field days. Increasing biologically fixed nitrogen in production systems of North Dakota will decrease the reliance of growers on fertilizers and increase financial sustainability of farm operations.	$27,321.00
North Dakota Department of Agriculture	$3,286,945.21	Increasing Knowledge and Consumption of Pulse Crops in Schools Meals	The USA Dry Pea & Lentil Council and the Northern Pulse Growers Association along with growers, trade members, and other stakeholders, will work together to increase the knowledge and consumption of pulse crops in school meals throughout North Dakota and the U.S. This project will 1) enhance the competitiveness of North Dakota-grown and processed pulse crops through increased consumption, knowledge, and introductions of whole pulses and pulse ingredients; and 2) will enhance the competitiveness of pulse crops through increased access within the National School Lunch Program (NSLP). This multi-tiered marketing effort will concentrate on the benefits of consuming and serving nutrient-dense whole pulses and products using pulse ingredients. Students and school foodservice operators will be interviewed and surveyed regarding their knowledge, use, and/or consumption of pulses and pulse ingredients pre and post program implementation to evaluate program success. These activities, resources, and targeted outreach will generate new avenues for long-lasting demand for pulse ingredients grown and processed in North Dakota.	$113,640.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	$3,286,945.21	Increasing the Competitiveness of Local Fruit Production with Tunnel Grown Strawberry in North Dakota	North Dakota State University and NDSU-Williston Research Extension Center will collaborate to examine the production of strawberry (Fragaria x ananassa) under tunnel protection in an effort to increase consumer knowledge of and access to day-neutral strawberry cultivars in local markets. Plugs will be transplanted in the spring of year one and over-wintered to evaluate potential for a two-year production cycle. Fruit yield and quality will be compared on the east and west sides of the state using two high tunnels and the low tunnel systems for six day-neutral strawberry cultivars in order to provide pertinent information for growers throughout North Dakota. Fruit yield and quality results along with production economic information will be disseminated to specialty stakeholders through field day presentations and public field tours, local, regional specialty grower meetings, and national conference gatherings on the potential for day-neutral strawberry production in North Dakota. This project will enhance the competiveness of strawberries as a specialty crop in ND through increased consumption and increased access to a locally grown fruit.	$96,639.00
North Dakota Department of Agriculture	$3,286,945.21	Increasing Total Protein Content through Multi-Parent Advanced Generation Inter-Cross in Dry Pea (Protein-MAGIC)	Pea (Pisum sativum) protein has emerged as a frontrunner and showed the most promise in the growing alternative protein market. The demand for pea protein is already high and expected to soar in the coming years. The goal of this project is to develop a novel genetic resource for increasing total protein content while simultaneously expanding diversity using a novel approach called Multi-parent Advanced Generation Inter-Cross, hereafter Protein-MAGIC. The Protein-MAGIC populations will serve a triple purpose: 1) systematically increasing total protein content while expanding genetic diversity; 2) direct and indirect selection of promising lines for cultivar development; and 3) permanent resource for genetic mapping of wide range of traits. The North Dakota State University pulse researchers will pioneer the development of the first-generation MAGIC populations to advance genomic research and genomics-assisted breeding and accelerate development of high-protein peas.	$197,057.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	$3,286,945.21	International and Domestic Promotion of North Dakota Specialty Crops	The North Dakota Department of Agriculture (NDDA) will partner with local and regional specialty crop companies, producers, processors, and producer associations to increase promotion and sales of specialty crops. NDDA will identify regions that have the potential to grow the consumption of North Dakota specialty crops. While identifying within these regions international and domestic tradeshows, missions and reverse missions that will be beneficial to attend. The information collected via end of event surveys will create a baseline of data that will be provided to interested parties locally and regionally. This data will show the return on investment to attend the international and domestic tradeshows, missions, and review missions. Currently, these companies, producers, processors, and producer associations are lacking opportunities to connect to new outside contacts and potential buyers. This funding will make an additional significance when considering the trade barriers and climate hardships they have encountered over the last couple of years.	$133,000.00
North Dakota Department of Agriculture	$3,286,945.21	International Market and Trade Policy Analysis for U.S. Field Peas and Lentils	North Dakota State University (NDSU) will conduct an economic and policy analysis of international markets for field peas and lentils and disseminate the results to growers and other stakeholders in North Dakota. Project results will directly benefit field pea and lentil growers, grower's associations and the region's pulse industry by focusing promotion activities on markets with the greatest growth potential. The results of this research will enhance the knowledge of potential export opportunities beyond the current major markets. In part, the uncertainty in the current major markets is due to the sensitivity of the pulse markets in the destination countries. Thus, this research will benefit field pea and lentil growers and other stakeholders by contributing to their understanding of the export market opportunities, so that a more stable export market for pulses can be established.	$67,064.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	$3,286,945.21	Managing Sclerotinia Head Rot in Confection Sunflowers with Bee-Vectored Clonostachys Rosea and Partially Resistant Hybrids	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 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 combined deployment of partially resistant hybrids and a novel disease management strategy that has conferred consistent, strong reductions in head rot. This proposal seeks to integrate these management strategies, to determine the spatial distribution of beehives required to achieve satisfactory control of head rot by quantifying the distance away from beehives that satisfactory disease control is achieved, and to generate additional data on the relative susceptibility of confection hybrids. The project will contribute to the development of rigorous head rot management recommendations for confection sunflowers.	$105,630.00
North Dakota Department of Agriculture	$3,286,945.21	North Dakota Tour to Increase Purchase of Dry Peas, Lentils and Chickpeas in Food Aid	The USA Dry Pea and Lentil Council – the National organization representing the growers, processors and exporters of US grown pulses (dry peas, lentils and chickpeas). The Council will host a “Field and Production Tour” of the dry pea, lentil and chickpea production, processing and exporting companies of North Dakota. This tour will host PVO (Private Volunteer Organization) CEOs, Managers and Purchasers that are responsible for the purchase of US farm products that are purchased and exported for food aid programs around the world. The two-day event will include farming operations, processing, inspection and quality control, contracting and food safety. Additional presentations will include the value, use and functionality of pulse crops given by national content experts. The tour will culminate in a hosted event featuring ND pulses. Ample time will be allotted for ND pulse processors to meet one on one with the PVO buyers in order to secure orders, understand the details of quality control and food safety. Follow-up information, sales support and analytics will be conducted by the USADPLC; and reported in the industry newsletter and social media.	$67,400.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	$3,286,945.21	Optimizing Foliar Fungicide Applications and Winter Rye for Improved White Mold Management in Dry Beans	The North Dakota State University Carrington Research Extension Center, in collaboration with the NDSU Robert Titus Research Farm in Oakes, 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. This project seeks to establish field trials evaluating fungicide application timing and fungicide droplet size 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 reduce white mold but for which there has been little rigorous testing. 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 Northarvest Bean Growers Association, posted online in a user-friendly format, and published in a peer-reviewed journal.	$105,308.40
North Dakota Department of Agriculture	$3,286,945.21	Optimizing Production of Pulse Sprouts with Increased Nutritional Quality	North Dakota State University will evaluate a wide range of pulse varieties suitable for the production of high nutritional quality sprouts, including pea spouts, lentil sprouts, and chickpea sprouts. It will also develop full nutritional profiles (i.e., vitamin C, soluble free and bound phenolic compounds, phytochemicals, flavonoids, nutritional minerals, and total antioxidant activity) of pulse sprouts produced under different environmental/processing conditions. Spouts growth and yield will also be investigated. The optimized pulse sprouts production practices will be recommended. It will also assist in creating an awareness of and disseminate information about productions and nutritional aspects of pulse sprouts. This accomplishment of the proposed study will generate useful information to promote the production of diverse pulse sprouts in North Dakota, increase ND pulse grower profitability and competitiveness, and promote a healthy local food system. The research results will be adapted into videos, web pages, and workshops, in order to effectively reach diverse audiences of pulse growers, processors, and consumers.	$176,490.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	$3,286,945.21	Providing Schools with Resources to Understand Food Safety of Specialty Crops from North Dakota Farmers	The North Dakota Department of Agriculture (NDDA) will create resources for school food service personnel that include providing materials to help identify and mitigate risks to food safety and piloting a tote exchange program with select schools. This information will be shared on the NDDA website, through newsletters and directly with food service directors at back-to-school workshops in Minot, Fargo and Bismarck. The NDDA understands there are many reasons schools choose to purchase specialty crops “off the truck” vs. directly from farmers. The NDDA realizes that sharing the information being taught to growers with the schools is the best way for schools to understand which questions they should be asking farmers in order to mitigate the risks. This will be accomplished through the creation of a specialty crop food safety guide that will be shared with school food service staff at three back-to-school workshops sponsored by DPI’s child nutrition program. Another part of this project will be to pilot a tote exchange program with three schools.	$49,552.04
North Dakota Department of Agriculture	$3,286,945.21	Putting North Dakota Small Fruit Breeding into Action	After years of examination, North Dakota State University is almost ready to release serviceberry and cold-hardy grape cultivars. However, before this can happen, stock material increases, and a recommended propagation procedure must occur. North Dakota State University will collect cultivar specific release data and examine the best methods to increase plant material for release to licensed propagators. Scientifically developed best propagation techniques for serviceberry and grape accessions will be shared with stakeholders through publication and field days. Ultimately, propagated serviceberry and grapevine material will be directly distributed to licensed propagators for distribution.	$68,778.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	$3,286,945.21	Research and Demonstration of Innovative and Sustainable Composting Methods for Specialty Crop Production	Dakota College at Bottineau will research and demonstrate innovative and sustainable composting methods using biochar and wood chip from forestry waste as well as compost tea to improve specialty crop yield and enhance soil health with minimal chemical input. The results obtained from the project will be disseminated to specialty crop producers through field days held in summer of 2021 and 2022 through demonstrating the different composting method set up on campus as well as through presentations at the ND High Tunnel, ND Local Food and NPSAS Food and Farming conferences. The project is 24 months, just long enough to collect baseline data on the effectiveness of different composting methods on soil and plant health and specialty crop yield. In the third year of the project after obtaining the result of our research we will encourage specialty crop producers to adopt our composting methods and apply those methods in their field.	$107,920.60
North Dakota Department of Agriculture	$3,286,945.21	Screening for Pea Root Rot Disease Resistance in NDSU Breeding Lines	Root rots caused by Fusarium species and Aphanomyces euteiches are important yield limiting diseases of peas in North Dakota. Host resistance is the most economical and sustainable disease management strategy available. Expression of root rot symptoms is highly dependent on the environment, and thus screening breeding material for resistance to root rots should occur over multiple environments. Despite tremendous pulse acreage in eastern Montana and western North Dakota, no breeding nurseries have been established in this region. North Dakota State University Williston Research Extension Center will 1) maintain Aphanomyces and Fusarium root rot breeding nurseries by infesting the soil with pathogen inoculum and growing susceptible host crops and 2) screen North Dakota State University pea breeding lines for resistance to Fusarium and Aphanomyces root rot. Establishing these nurseries will serve as a resource to the breeding community for many years to come and screening NDSU breeding lines will aid in the generation of root rot resistant varieties adapted to the North Dakota growing region.	$47,973.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
North Dakota Department of Agriculture	$3,286,945.21	Securing International Pulse Buyers	The North Dakota Trade Office will partner with upper Midwest specialty crop companies, producers and producer associations to secure pulse buyers for upper Midwest specialty crops by establishing a North Dakota pavilion at the Gulfood show in Dubai in February 2021. Gulfood is the largest annual food event serving as a gateway to new and emerging markets. NDTO will assist 4 companies in gaining an international buying audience through meetings and attendance at the Gulfood show. This event will increase awareness of Upper Midwest companies as reliable suppliers of safe specialty crops to global markets, including the Middle East and North Africa region. Success will be measured by an increase in sales and/or volume of specialty crops.	$98,857.00
Ohio Department of Agriculture	$593,816.70	Green Umbrella and Greater Cincinnati Regional Food Policy Council – "Expanding Feed Our Future: Local Food for Growing Minds Farm to School Program"	Green Umbrella (GU), Greater Cincinnati's leading sustainability alliance, in partnership with the Cuyahoga County Board of Health (CCBH), will implement components of CCBH's Feed Our Future: Local Foods for Growing Minds (FOF) public health program in order to enhance the competitiveness of Ohio specialty crop producers to school districts in Southwest Ohio.	$68,960.00
Ohio Department of Agriculture	$593,816.70	Maumee Valley Growers Association- "Plant Something! Reaching Your Generational Customers"	The Maumee Valley Growers Association (MVGA) seeks to implement a "Plant Something" campaign by testing unique generational purchasing habits of floriculture customers in ten retail greenhouse/garden centers in Ohio. MVGA will model that initiative and create greater awareness and education throughout the NW Ohio's region by encouraging private and public awareness of the health, environmental and economic benefits of floriculture.	$50,000.00
Ohio Department of Agriculture	$593,816.70	Ohio Ecological Food and Farm Association – Production and Marketing Resilience for OH Specialty Crop Growers	Through educational events (workshops, webinars, and farm tours) and support (direct technical assistance and publications) focused on managing production and marketing risks, the Ohio Ecological Food and Farm Association (OEFFA) will help Ohio specialty crop growers enhance their competitiveness by making their farms more resilient to extreme weather events and market disruptions.	$84,610.00
Ohio Department of Agriculture	$593,816.70	The Ohio State University- "Establishing Science-based Water Quality and Sanitation Guidelines for	Food safety is critical to the fresh produce industry in Ohio. In addition to a public health concern, food safety issues have had an adverse economic impact on growers and packers. Solutions for meeting food safety water quality and sanitation standards in hydroponic	$110,065.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
		Deep Flow Technology Specialty Crop Production Syst	greenhouses, especially deep flow raft systems are lacking. The Ohio State University will develop prevention, control and intervention strategies for hydroponic leafy greens with an emphasis on deep flow technology (DFT) systems.	
Ohio Department of Agriculture	$593,816.70	The Ohio State University—"Microbiome based improvement of mushroom cultivation"	The Ohio State University's Emerging Infectious Diseases Ecology and Mycology programs (PI: Dr. Jonathan M. Jacobs; Dr. Jason Slot) seek funding to establish a research program to support Ohio specialty crop mushroom production. Mushrooms as with plant-based cropping systems suffer from pest and disease pressure, but there are not many options for sustainable mushroom disease management.	$110,000.00
Ohio Department of Agriculture	$593,816.70	The Ohio State University-"Pesticide-free management of Pythium pathogens in hydroponic greenhouses"	The Ohio State University will partner with Bowling Green State University to develop effective, integrated methods, technology and recommendations for long-term, sustainable, non-pesticide management of Pythium root rot in hydroponic greens and disseminate the results to growers through online content and workshops.	$110,000.00
Oklahoma Department of Agriculture, Food, and Forestry	$589,979.24	"You-Pick an AG-tivity" Specialty Crop Education Activity Sheets for Oklahoma Agritourism Venue Visitors	Oklahoma Ag in the Classroom, Oklahoma Agritourism, and Oklahoma Farmer's Markets will create four "You-Pick an AG-tivity" Specialty Crop Education Activity Sheets for Oklahoma Agritourism Venue Visitors. These sheets will be distributed to the Oklahoma Agritourism Berry Farms, Pumpkin Patches, Christmas Tree Farms, and Peach Orchards to give to visitors to their farms,	$51,150.00
Oklahoma Department of Agriculture, Food, and Forestry	$589,979.24	Assessing Vegetable Grafting For Tomato, Pepper And Watermelon Production In Oklahoma	Grafting is regarded as an emerging and must-test technology for the U.S. vegetable industry. The usage of grafted vegetables in Oklahoma is at its earliest stages due to the lack of research-extension-teaching programs on vegetable grafting. Grafting has the potential to benefit Oklahoma vegetable growers through better biotic and abiotic management, enhancing crop vigor, lengthening harvest window, increasing total seasonal yield, improving heirloom variety performance, and creating a potential source of income by preparing and supplying grafted plants.	$86,690.00
Oklahoma Department of Agriculture, Food, and Forestry	$589,979.24	Backyard Demonstration Garden	Oklahoma State University Department of Horticulture and Landscape Architecture is establishing a Backyard Demonstration Garden that will be open to the public at The Botanic Garden at Oklahoma State University, located just west of the main campus in Stillwater, Oklahoma. This educational garden will feature two 40x40 foot	$37,722.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			backyards demonstrating how Oklahomans can produce food in their own backyard, no matter the size.	
Oklahoma Department of Agriculture, Food, and Forestry	$589,979.24	Colored Shade Netting Evaluations for Improving production and Quality of Cut Flowers and Vegetables	As input costs continue to increase, growers are looking for simple solutions to increase production or plant quality without having to make big changes to their production. Research at Oklahoma State University will evaluate colored shade cloth for both hydroponic vegetable production and for cut flower production to compare yield and quality to support local market production.	$75,034.00
Oklahoma Department of Agriculture, Food, and Forestry	$589,979.24	Farmers Market Agritourism Conference	The Oklahoma Department of Agriculture, Food and Forestry (ODAFF) will undertake a project to assist members of the specialty crop supply chain incorporate innovative and sustainable growing practices, learn new marketing techniques and connect with consumers more effectively. This project will culminate in a gathering of growers, market managers, venue owners and supporting partners in February of 2021 and 2022.	$84,451.00
Oklahoma Department of Agriculture, Food, and Forestry	$589,979.24	Let's Get Growing with a School Garden	The Oklahoma Department of Agriculture, Food & Forestry's Farm to School program will partner with three public schools and two Early Childhood Education programs to create and provide financial, technical and educational support for a school garden. The purpose of school gardens is to promote healthier eating and better learning.	$45,484.50
Oklahoma Department of Agriculture, Food, and Forestry	$589,979.24	Management of Potyviruses Infecting Cucurbits in Oklahoma	This project at The University of Tulsa focuses on cucurbit viruses to determine the complete genomes of three important and dominant potyviruses infecting cucurbits in Oklahoma and to find resistant varieties against these viruses to reduce the yield losses and increase cultivation and production of cucurbits. In Oklahoma, cucurbits (cucumber, melon, pumpkin, squash and watermelon) are grown on more than 734 farms with an acreage of 5,000 acres and they contribute approximately 2 million dollars per year to the state economy.	$92,689.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oklahoma Department of Agriculture, Food, and Forestry	$589,979.24	Preparing Oklahoma Pecan Processor for FSMA and Third-Party Audit through Research and Technical Assistance	Researchers at Oklahoma State University (OSU) will identify and optimize low temperatures and sanitizer based in-shell pecan sanitation methods to improve the microbial safety of pecans. The impact of the newly developed methods on the quality of treated pecans' color, texture, and water activity will also be analyzed. Food safety modernization act (FSMA) and non-regulatory third-party audits require that pecan shellers develop a food safety plan with a validated strategy to control food safety risks.	$69,177.00
Oregon Department of Agriculture	$2,056,469.28	Converting Beverage Processing Byproducts into High Value, Sustainable Packaging Products	The Oregon State University will conduct research and development to convert plant-originated beverage processing waste (byproducts) in the juice, cider, wine, beer, and kombucha industries into value-added and sustainable packaging products. Oregon's beverage industry generates large quantities of fruit/wine grape pomace. The majority of these byproducts are sent to landfills or used as composting and low-margin animal feed. However, these byproducts represent an enormous opportunity to create value through sustainable practices by converting them into packaging products with recent technology advances. PI has done noteworthy research for developing protocols of converting plant-originated, fiber-rich byproducts into green and sustainable packaging materials. This project will enhance the productivity and innovation of specialty crop producers by developing new prototypes/uses for beverage processing byproducts that leverage existing and emerging industries, enhancing sustainability and environmental stewardship practices through reutilization of byproducts, and benefiting the society by reducing impact of processing waste on the environment.	$172,918.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oregon Department of Agriculture	$2,056,469.28	Development of Sprout Inhibitors or Growth Suppressants in Potatoes	Oregon State University will develop new products for sprout inhibition or suppression in potato. The first step is to screen and identify natural products as sprout inhibitors or growth suppressants in potatoes to be implemented in potato storage. The implementation of the expected results will have significant positive impact on the potato industry, may help with overcoming the limitations of chemical inhibitors, and foster expanding markets for OR potato across the nation and internationally. We will be screening more than 120 essential oils and oil blends (some from our research program with unique chemical and biological characteristics) as sprout inhibitors. We expect to identify oils or oil fractions or blends that would have potential as substitute/alternative to the currently utilized synthetic chemicals. The adoption of new essential oil-based products in potato storage is expected to improve access to additional market segments, thus enhancing the marketability, economic returns, and safety of OR potato. In addition, essential oil-based products in potato storage and transportation could reduce exposure of workers to chemical pesticides, provide cleaner and safer products to consumers, and hence, contribute to improved human health.	$93,335.00
Oregon Department of Agriculture	$2,056,469.28	Enhancing Specialty Seed Production in Oregon through Outreach and Education	This project is a collaboration between stakeholder groups and the Seed Regulatory Program. The goal of this project is to increase industry awareness and compliance with regulations related to seed production, sale, and export. The project partners, including the Oregon Seed Association, Oregon Seed Council, and Willamette Valley Specialty Seed Association, will develop relevant educational materials concerning seed laws, record-keeping and labeling requirements, and diseases of concern that may impact export markets. These materials will be targeted toward industry stakeholders as well as new and beginning farmers. The project will utilize multiple outreach delivery methods, including print, electronic (i.e., email, social media), workshops, and presentations, leveraging the unique and diverse influence and reach of each project partner. This will enable the project to effectively impact a diverse and significant group. The outcome of this project will be enhanced competitiveness of Oregon seed crops	$124,214.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			through increased understanding of and compliance with rules governing the production, sale, and export of seed.	
Oregon Department of Agriculture	$2,056,469.28	Enhancing Turfgrass Carbon Sequestration to Improve Sustainability and Expand Market Access	Oregon State University will evaluate the impacts of turfgrass maintenance practices (nitrogen fertilization, irrigation, mowing height, and mowing frequency) on turfgrass carbon balance and soil carbon accumulation. This project will investigate how to enhance accumulation of soil organic carbon in turfgrass ecosystems. By understanding and potentially reducing the climate footprint of natural turfgrass, this research can provide ways of addressing the regulatory burden imposed by greenhouse gas reduction programs and simultaneously improve market acceptance. Results of this research will be disseminated to turfgrass seed producers, turfgrass managers (golf course superintendents, commercial turf managers, school and park employees), and other users (homeowners and master gardener programs) through extension activities including field days, presentations, and written materials.	$174,984.00
Oregon Department of Agriculture	$2,056,469.28	Gardening for Justice: Building Sustainable Vegetable Gardens in Correctional Facilities in Oregon	A key goal of this Growing Gardens project is to help former inmates find living wage jobs in the horticulture industry, when they are released, by providing training and certifications which are recognized by potential employers. This program provides inmates with the unique opportunity to develop horticultural skills and certifications that otherwise would not be afforded to them through regular prison programming As well as taking classes, working in the prison gardens	$95,566.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			and greenhouses, provides inmates with practical experience with production gardening as well as providing better access to fresh fruits and vegetables for the sites.	
Oregon Department of Agriculture	$2,056,469.28	Gorge Grown Mobile Market: Increasing Access to Specialty Crops in the Columbia Gorge	Gorge Grown Mobile Market: Increasing Access to Specialty Crops in the Columbia Gorge: Gorge Grown Food Network will increase the marketing and distribution of specialty crops in five counties and on the Warm Springs Reservation, using the Gorge Grown Mobile Market, our local produce aggregation and distribution system. The goal is to increase sales channels for specialty crop farmers and simultaneously increase access to fresh, locally grown fruits and vegetables in rural and under-resourced communities in the region. Project objectives include: 1. Improve access to affordable, healthy foods in low-income, rural areas through the addition of 4 Mobile Market stops in 4 new communities and 2 corner stores. 2. Increase economic viability for local specialty crop producers by expanding Mobile Market to support shoulder and winter specialty crop production resulting in increasing sales through the Mobile Market 200% and by $35,000 per year. We plan to achieve these objectives by increasing marketing of specialty crop products, hosting educational events alongside market stops, and increasing the number of communities served through the Gorge Grown Mobile Market.	$66,000.00
Oregon Department of Agriculture	$2,056,469.28	Increasing Oregon Grown Fruits and Vegetables in the School Marketplace	The Oregon Farm to School and School Garden Network (OFSSGN) and partners will increase purchases of Oregon-grown fruits and vegetables by Oregon schools (PreK-12) by 1) expanding and promoting a searchable online directory where Oregon schools can find fruit and vegetable producers who are ready to sell to schools; and 2) supporting interested producers in becoming school ready. We'll expand vital online resources to better equip Oregon's school food-service directors to find and buy Oregon-grown fruits and vegetables, increasing access to Oregon-grown fruits and vegetables for Oregon students.	$92,043.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oregon Department of Agriculture	$2,056,469.28	Integrated Control of Cabbage Maggot in Vegetable and Seed Crops	Oregon State University, North Willamette Research and Extension Center (NWREC) will investigate innovative control strategies to limit stand loss and harvest damage from cabbage maggot in Oregon Brassica vegetables and vegetable seed crops. Strategies to be tested include entomopathogenic fungi for control of larvae and overwintering pupae, trap crops and baited feeding formulations targeted at adults, and improved timing of chemical applications to reduce larval infestation. Growers will be invited to field days held at NWREC to view research plots and discuss implementation of new practices. Results will be disseminated to growers at PNW vegetable grower education meetings, Extension publications, and through online database resources housed at https://horticulture.oregonstate.edu/oregon-vegetables.	$165,870.00
Oregon Department of Agriculture	$2,056,469.28	Market Development for Processed Oregon Caneberries and Strawberries in Japan	The Oregon Raspberry and Blackberry Commission (ORBC) will leverage new Oregon blackberry nutrient data to further expand market development and access for Northwest Berries to Japan through a comprehensive marketing program connecting directly with product manufacturers, Japanese chefs, and retail companies before, during, and after FOODEX, Japan's largest exhibition dedicated to food and drink. Building from past interactions with the Japanese marketplace through another SCBGP, the Oregon berry industry needs to demonstrate improvement in available nutrient information. As such, this project will begin with comprehensive nutrient testing of frozen Oregon blackberries. Pre-FOODEX preparation will also include Japanese Marketplace Training for all interested industry members to prepare for success in the Japanese business environment. The ORBC will then exhibit at the 4-day FOODEX trade show, host a culinary demonstration, participate in an Agricultural Trade Office (ATO) customer reception, sample product to potential buyers, and follow up with leads at regular intervals for the remainder of 2021/ 2022. These activities will directly support export market development of Oregon berries to Japan.	$122,834.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Oregon Department of Agriculture	$2,056,469.28	Market Research and Crop Development to Re-invigorate Oregon's Vegetable Industry	The Oregon Processed Vegetable Commission, in cooperation with vegetable producers, processors, Oregon State University, and Campbeltown Consulting will assess new market opportunities for processed vegetables and rotational crops and develop crop production practices that will ensure a sustainable future for the processed vegetable industry in Willamette Valley. A key piece of this project is providing educational travel scholarships to new and mid-career farmers and other agricultural professionals. Farmers attest that meeting and experiencing the challenges of other producers face-to-face in dissimilar production regions is of utmost importance when trying to revise and improve on current production methods.	$175,000.00
Oregon Department of Agriculture	$2,056,469.28	Oregon Blueberry Retail and Foodservice Promotions in Southeast Asia	The Oregon Blueberry Commission (OBC) will conduct retail and foodservice promotions in Vietnam, Philippines, and Singapore. Since its recent market opening to Oregon fresh blueberries, Vietnam is poised to become the Oregon blueberry industry's largest Asian customer. In the Philippines, a market access agreement is expected to be finalized by mid-2020 which will permit the entry of fresh blueberries from Oregon for the first time to that country. OBC plans to use the information learned with past successes (in Singapore and Vietnam), to structure in-market promotional efforts in order to grow consumer awareness and sales of Oregon blueberries in the Philippines, and to continue developing OBC's efforts in Vietnam and Singapore. The promotional strategy will include retail promotions with point of sale materials, advertising, and retail demos that will promote the origin of Oregon blueberries among trade partners who carry the product. Promotions may also be extended to cover processed products in the market that incorporate Oregon blueberries as an ingredient.	$175,000.00
Oregon Department of Agriculture	$2,056,469.28	Oregon Food as Medicine: Expanding the Market for Vegetable CSA's	Friends of Zenger Farm and multiple healthcare partners will collaborate to expand the local farm-direct market for vegetable Community-Supported Agriculture (CSA) produce purchased through Medicaid prescriptions. During the grant period we will connect Oregon specialty crop vegetable farmers to new low-income consumers through community health centers. We anticipate increasing adult and	$166,073.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			child consumption of Oregon specialty crops by educating Oregon farmers to ensure they are equipped to access this emerging market.	
Oregon Department of Agriculture	$2,056,469.28	Oregon Small Food & Beverage Business Alignment Project	The Oregon Department of Agriculture (ODA) will provide resources for small to mid-sized food and beverage companies, which use Oregon's array of specialty crops, seeking opportunities to grow their business. The goal of this project is to assist a minimum of 250 companies over the course of three years, by providing resources including an easy to use digital and print roadmap or guide, provide opportunities for business continued education and provide a platform for buyer/seller connections. Small to mid-sized companies make up a large part of the state's economy, and in order to grow, there are essential investments that businesses need to make in order to continue to be competitive. This project will allow companies in various stages of growth the chance to access the appropriate opportunities and allow for assistance where needed.	$103,112.00
Oregon Department of Agriculture	$2,056,469.28	Seeking Alternatives to Chlorpyrifos: Addressing Needs for Sustainable Insect Management	Potential for restrictions on the use of chlorpyrifos or the complete revocation of its registration by the Oregon Department of Agriculture in Oregon has concerned Oregon growers. It is difficult to estimate the economic impact on the specialty crop industry in Oregon as a result of canceling or further limiting the use of chlorpyrifos, but Oregon specialty crop growers consider that the economic impact would be substantial. Therefore, Hermiston Agricultural Research and Extension Center (HAREC) will seek to initiate a cross-commodity collaborative research project to identify viable options as alternatives to chlorpyrifos; once it is no longer available for use in Oregon. Identification of promising alternatives and knowledge gain of their viability by analyzing the cost-benefit data will be disseminated to the Oregon Department of Agriculture and growers promptly through publications, social media tools, field days and growers' meetings, etc. Information on practical alternatives to chlorpyrifos will help growers to incorporate these products in their integrated pest management	$162,794.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			plans to enhance the productivity of specialty and other crops of Oregon.	
Pennsylvania Department of Agriculture	$1,097,417.02	2021 PENNSYLVANIA MONTH LOCAL FEEL AND STATEWIDE APPEAL	The Pennsylvania Vegetable Marketing and Research Program (PVMRP) aims to increase sales within the Pennsylvania vegetable industry by equipping PA vegetables growers with marketing and sales resources and skills, while simultaneously acting as a brand ambassador for Pennsylvania vegetables through ongoing consumer-facing marketing activity, as well as through a marketing campaign, August is PA Produce Month.	$21,289.03
Pennsylvania Department of Agriculture	$1,097,417.02	Assessment of Listeria Monocytogenes Control Strategies in Tree Fruit Packinghouses	The Pennsylvania State University will help tree fruit packers mitigate contamination of tree fruits by assessing Listeria monocytogenes control strategies in tree fruit packinghouses and disseminating recommendations on best practices for packinghouse cleaning and sanitizing in a workshop for packers.	$69,691.00
Pennsylvania Department of Agriculture	$1,097,417.02	Best Practices for Maximizing Production While Minimizing Environmental Impacts	The American Mushroom Institute is dedicated to both the economic growth and environmental stewardship of the mushroom industry in Pennsylvania. The Keystone State is responsible for nearly 63% of the country's mushroom production; 50% in Chester County and 13% in Berks County. This project is designed to assess and verify current industry practices and then educate the industry on best practices for achieving robust yields, a high-quality crop, controlling pests and diseases; all while minimizing impacts on the surrounding watersheds.	$52,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Pennsylvania Department of Agriculture	$1,097,417.02	Developing New Tactics for Spotted Lanternfly Management in Vineyards	Researchers at Penn State will develop new tactics for the management of spotted lanternfly in vineyards through behaviorally based applications of exclusion netting and insecticidal netting, reducing reliance on broadcast insecticide applications, decreasing vine damage, and disseminating results to stakeholders through various extension outlets.	$100,100.00
Pennsylvania Department of Agriculture	$1,097,417.02	Enhancing Competitiveness of Peach Growers with Size-Controlling Root Stocks	Penn State Extension horticulture specialists and educators will collaborate with specialty crop growers from diverse backgrounds (including next generation young, Latino/a/Hispanic and plain sect) to enhance the competitiveness of peach growers by demonstrating the potential productivity, labor efficiency, fruit quality and socio-economic benefits of new size-controlling rootstocks. Interactive study circles and field days will be conducted at ten model demonstration plantings established at commercial orchard sites in major fruit growing regions across the Commonwealth.	$56,002.00
Pennsylvania Department of Agriculture	$1,097,417.02	EVALUATE AND SELECT POTATO VARIETIES TO REPLACE NORWIS IN PA	Pennsylvania Co-Operative Potato Growers, Inc. will work with Pennsylvania potato growers, packers, processors, Sterman Masser, Inc. and Penn State University on this project to identify fresh cut potato varieties to replace Norwis that may be economically viable to produce in Pennsylvania. We will collect potato varieties/breeding clones with similar characteristics as Norwis from most potato breeding programs in the US. These varieties will be evaluated in field trials and in lab for fresh cut quality as well as yield, size, tuber internal and external defects, and disease resistance.	$74,225.00
Pennsylvania Department of Agriculture	$1,097,417.02	Food Security Through Increased Specialty Crop Availability and Program Awareness	Food Security Through Increased Specialty Crop Availability and Program Awareness will enhance the competitiveness of specialty crops through increased access and ensuring Indiana County FMNP, SFMNP and SNAP recipients learn of available fresh, local specialty crops at the Indiana County Farmers' Market. Foodbucks matching program will incentivize market shopping and increase FMNP, SFMNP and SNAP buying power.	$100,100.00
Pennsylvania Department of Agriculture	$1,097,417.02	Impact of Management Practices on Soil Mycorrhizal Fungi	Rodale Institute will evaluate the impact of management practices on arbuscular mycorrhizal fungi (AMF) abundance, diversity, efficacy, and the role of AMF in enhancing vegetable crop nutrient uptake in conventional and organic cropping systems.	$100,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Pennsylvania Department of Agriculture	$1,097,417.02	Legal Planning for Specialty Crop Producers	In order to assist Pennsylvania specialty crop producers successfully augment wholesale sales revenue with sales revenue from: (a) direct-to-consumer, (b) pick-your-own, (c) value-added commodity processing, or (d) the conduct of agritainment/educational activities, Penn State Law's Center for Agricultural and Shale Law will produce: (1) a series of 8 cumulative topical workshops over an approximate 21 month period; and (2) publish a downloadable and hard copy Producer's Guide at the conclusion of the grant period, compiling the content from all 8 topical workshops, thereby, educating specialty crop producers about the prevention and planning necessary to best avoid contractual, tort, and regulatory liabilities in conducting such income-augmenting activities.	$58,138.00
Pennsylvania Department of Agriculture	$1,097,417.02	Management of Soilborne Pathogen in High Tunnel Tomatoes	Crop production under protected culture is increasing on many diversified vegetable farms in Pennsylvania. Initially due in part to a NRCS cost-share program, now it is in partial response to our changing climate and the shift in the frequency and severity of rain events. Although initially developed to be semi-permanent, high tunnel production has intensified and monocropping of tomato is a common practice.	$50,259.00
Pennsylvania Department of Agriculture	$1,097,417.02	Multispectral Analysis for Pest Detection in Specialty Crops	This project addresses the need of improving early pest detection in specialty crops. Plant feeding insects cause major economical loses to specialty crops, thus their early detection is essential for early control. Insect pests produce direct damage by feeding on leaves, fruits, stems and roots, or they can affect plants indirectly by transmitting diseases.	$46,001.00
Pennsylvania Department of Agriculture	$1,097,417.02	PA Preferred Culinary Connection	Strategic Contracting, Inc. will plan and coordinate the 2021 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.	$50,625.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Pennsylvania Department of Agriculture	$1,097,417.02	Pennsylvania Produce Auctions A Buyers and Vendors Guide	Penn State Cooperative Extension will lead the development and delivery of workshops, publications, and a financial benchmarking study regarding Pennsylvania produce auctions. The outcomes of this project will include 1.) greater utilization of Pennsylvania produce auctions by local wholesale buyers; 2.) increased understanding of produce auction operations by prospective vendors; and 3.) strengthened food safety practices of existing produce auction vendors. These outcomes will have the aggregate effect of increasing sales of specialty crops for Pennsylvania farmers.	$18,600.00
Pennsylvania Department of Agriculture	$1,097,417.02	Pennsylvania Wine Grape-Growing and Experience	The Pennsylvania Winery Association (PWA) will significantly expand distribution of its consumer and industry marketing content relevant to Pennsylvania (PA) wine grape-growing and the PA Wines experience. Building on the valuable assistance of recent Specialty Crop Block Grants, the PWA will produce a series of three premium print publications.	$60,000.00
Pennsylvania Department of Agriculture	$1,097,417.02	Specialty Crop Farm Business Security Through Long-term Lease Agreements	Pennsylvania Farm Link will develop case studies on five specialty crop farmers with long-term leases and three sample long-term lease agreements. A specialty crop long-term lease agreement resource will be developed and distributed through educational events and specialty crop trade shows. Specialty Crop Farm Business Security Through Long-Term Lease Agreements will enhance competitiveness of specialty crops through more sustainable land acquisition which provides long term security for the farm operation.	$22,335.00
Pennsylvania Department of Agriculture	$1,097,417.02	URBAN FARMERS MARKETS PROMOTING	The Food Trust (TFT) will strengthen sales of PA specialty crops at its network of Farmers Markets in Philadelphia through the creation of a marketing campaign and by connecting local growers and corner stores through a Farm to Retailer program.	$38,882.81
Pennsylvania Department of Agriculture	$1,097,417.02	Yield Performance and Quality of Sweet Potato Grown under High and Low Tunnel Systems	Researchers at Penn State University will test and develop management strategies for sweet potato production under protected culture systems, namely high and low tunnel systems with the goal of extending the growing season and improve yield and quality of sweet potatoes and creating new market opportunities for the local production of sweet potato as a specialty crop. The project will allow to select specialty sweet potato varieties suitable for low and high tunnel	$68,102.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			production, which will constitute a profitable option for crop rotation in protected culture systems.	
Puerto Rico Department of Agriculture	$518,343.13	1. Supporting Farmers In The Development Of The Farm's Food Safety Plan Under FSMA Regulations	FIDA is interested in supporting farmers in the development of the farm's food safety plan, based on the Standards for the Cultivation, Harvest, Packaging and Storage of Fresh Agricultural Products for Human Consumption (21 CFR Part 112) of the Food Safety Modernization Act under the FDA Jurisdiction. The farm's food safety plan will be developed by conducting a risk assessment, reviewing farm operations, and identifying practices and conditions that contribute to product safety risk. FIDA will offer training and mentoring to a total of 300 producers of specialized crops, as well as agronomists from the Department of Agriculture and personnel from the University of Puerto Rico Agricultural Extension Service.	$241,000.00
Puerto Rico Department of Agriculture	$518,343.13	2. Assist Farmers to Comply With The Food Safety Modernization Act (FSMA)	In recent years, FIDA and the Department of Agriculture have helped farmers comply with the Food Safety Modernization Act (FSMA), establishing capacity building for the Product Safety Rule (PSA), and Preventive Controls for Human Food Regulation (PCQI). During the courses there was a high interest in agricultural workers to be trained on the standards established by the FDA in the subparts of the Safety Rule for Fresh Agricultural Products that are applicable to the labor responsibilities of farm personnel. FIDA will train specialized crop farmers in the Product Safety Alliance (PSA) Producer Training Course, in the Preventive Control Qualified Individual (PCQI), Good Manufacturing Practices (GMP), and Worker Course agricultural according to FSMA regulations.	$132,900.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Puerto Rico Department of Agriculture	$518,343.13	3. Practical Compost Workshop and Practical Course on Water Sources, Irrigation Systems And Water Sampling For The Analyzes In The FSMA Law	For the past few years, FIDA and the Department of Agriculture have offered training courses on the new FSMA Regulations. During these trainings, farmers raised doubts regarding compost issues and the quality of agricultural water within the FSMA Law. To gain an understanding of these 2 important issues in the Law, FIDA created 2 courses that include equipment, materials, and publications for 300 participants. In addition, the project includes the preparation, recording and editing of some videos on each subject in particular to be able to distribute them through the participants, general public and future participants of other courses.	$103,373.50
Puerto Rico Department of Agriculture	$518,343.13	4. PSA Trainer or PSA Lead Trainer and Course on How To Conduct An Assessment Of Compliance With Regulation	The Department of Agriculture and FIDA aims to prepare DA, FIDA, and the Agricultural Extension Service staff to be PSA Trainers or PSA Lead Trainers. Personnel who obtain the title of instructor of the Alliance or lead instructor of the Alliance may offer the farmers of Puerto Rico the standardized curriculum of the PSA to train producers of fresh agricultural products in order to comply with the regulatory requirements of the Food Safety Standard for Fresh Agricultural Products of the FDA Food Safety Modernization Act. In addition to being PSA instructors, they will be given a course on How to Conduct an Assessment of Compliance with Regulation 21 CFR 112. This will allow staff to conduct educational visits on the farm to raise awareness and enable farmers to prepare for comply with the requirements of the standard and audits of Good Agricultural Practices.	$29,807.45
Rhode Island Division of Agriculture	$271,945.83	African Alliance of RI Beginner Farmers' Specialty Crops Project Expansion	The African Alliance of Rhode Island (AARI) will contract with the RI Department of Agriculture to work with beginner and small minority farmers to increase production and consumption of local, sustainably grown specialty vegetables, greens and value-added products that growers sell at eight AARI farmers markets located in food desert neighborhoods in Providence RI. AARI will expand available acreage at its BAMI Farm in order to attract new growers and increase land available to current growers, improve infrastructure at farm (new 4-season greenhouse, installation of high tunnels, improvements to water supply/ irrigation, etc.), add four new farmers market sites and continue to sell produce at Farm Fresh Armory Market and Pawtucket	$25,500.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			Winter Market, in order to help small growers achieve earned income and improve local access to fresh in food desert communities.	
Rhode Island Division of Agriculture	$271,945.83	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 farmyards 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 ½ 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	$271,945.83	Enhancing Market Access for Rhode Island Specialty Crop Growers	Rhode Island Department of Environmental Management - Division of Agriculture (RIDEM) aims to provide several services to Rhode Island specialty crop growers in order for those growers/commodities to have increased market access and enhanced competitiveness. Two components that will enhance market access are USDA organic certification and on-farm food safety. Contracting a private organic farm inspector/reviewer is necessary to meet USDA National Organic Program requirements for separation of duties in the organic certification process, which include initial application review, organic farm inspection, final application review and certification decision. RIDEM will also contract a seasonal food safety auditor to provide education, outreach and technical assistance to local farms. In addition, specialty crop farms will be able to test their agricultural water sources in order to mitigate the risk of pathogens on their crops that enter into commerce.	$27,239.00
Rhode Island Division of Agriculture	$271,945.83	Farms Forward: A Farmer Forward Farm to School Campaign	Farm Fresh Rhode Island will work to increase purchaser and consumer awareness, demand, and ability to purchase specialty crops from RI farmers by developing and implementing an educational marketing campaign that highlights RI specialty crop farmers and the produce that they sell to schools. This educational campaign will include activities such as farmer profiles, virtual farm field trips, social media promotion, and Farm to School resources to connect sellers and buyers. As part of this campaign, we will provide technical assistance and educational opportunities to participating school foodservice, congregate meal sites, and farmers to increase their knowledge of and ability to purchase more from these farms. These activities will complement and enhance the Harvest of the Month promotion program (HOM) by creating richer relationships between specialty crop farmers, students, and buyers.	$27,666.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Rhode Island Division of Agriculture	$271,945.83	Rhode Island Produce Safety Improvement Grants to Enhance Grower Competitiveness & On-Farm Food Safety	The Rhode Island Department of Environmental Management - Division of Agriculture (RIDEM) will help local produce growers implement on-farm food safety practices, transition to compliance with the Food Safety Modernization Act (FSMA) Produce Safety Rule, follow Good Agricultural Practices (GAPs) and meet increased market demands for on-farm food safety by providing cost share grants to Rhode Island growers for on-farm food safety improvements. These cost-share grants will partially reduce the costs of implementing on-farm food safety practices in order to help growers transition to compliance with the Food Safety Modernization Act (FSMA) Produce Safety Rule and/or meet market demands for on-farm food safety. Cost-share grants will be limited to allowable costs under the SCBGP.	$40,000.00
Rhode Island Division of Agriculture	$271,945.83	RIDEM Get Fresh Buy Local Campaign	The Rhode Island Department of Environmental Management - Division of Agriculture (RIDEM) will support RI Grown specialty crops by designing compliance criteria and identity standards for the “Get Fresh, Buy Local” logo, creating a marketing campaign to increase consumer awareness and grower participation in the RI Grown program, and promoting verified, locally grown specialty crops through an interactive, online map. The establishment of a RI Grown brand, based on verified grower information, will include a pointed effort to address growing concern that products are being mis-branded, and diluting the integrity of those products that are locally grown The RI Grown Program and use of the “Get Fresh, Buy Local” logo will provide a platform to increase consumer awareness surrounding RI Grown specialty crops and increase their confidence that the products they are purchasing truly are locally grown. Additionally, consumers can be assured that those farms in the RI Grown program are following all best practices monitored within the Division of Agriculture. This includes all new food safety requirements for which water testing and outreach remain critical points of contact with growers. Therefore, we plan to continue and expand the water testing program for RI specialty crop producers.	$5,500.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Rhode Island Division of Agriculture	$271,945.83	The Future of Growing & Marketing Specialty Crops: Training and Connecting Young and Beginning Farmers	The Young Farmer Network (YFN) of Southeastern New England, a fiscal project of the National Young Farmers Coalition (NYFC), is requesting funds to offer specialty crop production and marketing trainings and farm tours for young and beginning farmers in Rhode Island. We will focus this project on critical tools for the next generation of Rhode Island specialty crop farmers: climate-resilient crop production, strategic marketing, and peer farmer support. Our project's outcomes are to: (a) improve overall production of specialty crops by increasing the number of climate-resilient practices young and beginning farmers are employing in the face of the changing climate in Rhode Island; (b) improve the competitive marketing advantage of young and beginning farmers for their specialty crops through online marketing tools; and (c) build a specialty crop farming community in concert with these training projects.	$39,368.00
South Carolina Department of Agriculture	$595,317.11	1. Evaluating and promoting cold-hardy citrus species for South Carolina	Clemson University will evaluate tree performance, frost tolerance and fruit quality of cold-hardy citrus species that could be grown in South Carolina. This project aims to provide recommendations to farmers and nurseries that are willing to diversify their crops, and to nurseries on citrus characteristics; it also aims to assess expected performance and develop management practices specific for our conditions in South Carolina. The project will also reach out to local communities to increase knowledge and consumption of citrus. Specifically, results will be disseminated through grower meetings, regional conferences, field days, 4-H healthy living programs, factsheets, as well as through online platforms such as the South Carolina Grower blog, social media posts by Clemson University Horticulture Extension Team, and a new website.	$20,850.00
South Carolina Department of Agriculture	$595,317.11	2. Integrated Management of Peach Associated Nematodes Endemic In South Carolina	Following statewide survey for peach associated nematodes in South Carolina, greenhouse and on-farm studies will be conducted at Clemson University and three peach orchards in South Carolina, respectively to develop an integrated nematode management program, and the results will be disseminated to stakeholders through extension and scientific publications, grower meetings, field days, and scientific meetings.	$47,823.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
South Carolina Department of Agriculture	$595,317.11	3. Developing first strategies to manage bronzing, a major factor impairing the quality of SC peaches	Clemson University will develop and provide South Carolina peach growers with first ever recommendations to manage peach skin bronzing. This project aims to generate immediate-term and scientifically based practical measures to prevent or reduce the incidence and severity of bronzing and to disseminate results to stakeholders through grower meetings and field days.	$50,000.00
South Carolina Department of Agriculture	$595,317.11	4. Enable breeding of peach cultivars for spring climate resilience traits	Clemson University will improve economic sustainability of the SC peach industry by enabling development of climate resilient peach cultivars with increased heat requirement to reduce flower and fruit exposure to potentially crop destroying frosts.	$35,128.00
South Carolina Department of Agriculture	$595,317.11	5. Improving propagation efficiency of golden Camellia, a valuable yellow-flowering selection with high market demand	Clemson University will enhance the competitiveness of South Carolina's floriculture industry by developing efficient propagation methods for golden camellia, a valuable yellow-flowering species with high market demand. Currently golden camellia is selling for about $10 more than common camellias per plant and is sold out quickly. Various hormones, rootstock genotypes, and growth conditions will be tested and optimized for rooted cutting, grafting, and micropropagation. Endogenous hormone level and major rooting genes will be investigated. These efficient methods will benefit camellia breeders and commercial producers. Propagated plants and protocols are to be disseminated to stakeholders through grower annual meetings and field days, as well as publication of manuscripts.	$46,920.00
South Carolina Department of Agriculture	$595,317.11	6. Encouraging Healthy Lifestyles and Increased Consumption of Specialty Crops through Seed to Table Education, Youth Development, and Market Access	Hub City Farmers Market (HCFM) seeks to enhance the competitiveness of specialty crops through increased consumption. This will be done through intentional nutrition education activities as part of our Seed to Table program in primary schools in Spartanburg County and at HCFM's Urban Teaching Farm. Seed to Table workshops are planned and facilitated by HCFM's Healthy Hero Coordinator and Urban Farm Manager. Nutrition education will promote consumption of South Carolina Grown fruits and vegetables, which aligns with the nutrition standards of each local School Food Authority (SFA).	$33,727.49

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
South Carolina Department of Agriculture	$595,317.11	7. Development of a New Diagnostic Tool to Identify the Bacterial Disease Complex on Leafy Brassica Greens	Clemson University will develop and evaluate a new diagnostic tool for specific detection of bacterial blight and bacterial leaf spot on leafy brassica greens. The tool developed in this project will accelerate disease diagnosis and assist future research to identify the environmental factors that can help predict the seasonal transition between the two pathogens in the field. Results from this project will be communicated to brassica greens growers in South Carolina through Extension meetings, publications, and field days.	$39,974.00
South Carolina Department of Agriculture	$595,317.11	8. Cultivating Heat and Humidity Tolerant Beans in South Carolina	Clemson University in part with the South Carolina Specialty Crop Growers Association and South Carolina Department of Agriculture will implement a grow out of two varieties of heat and humidity tolerant beans, speckled and green beans, to increase the specialty crop industry in South Carolina. This project has 3 expected outcomes: 1) increase specialty crop industry in South Carolina 2) provide access of heat and humidity tolerant beans to South Carolina growers 3) provide the public with a high protein, nutrient dense South Carolina-grown crop that is economical for people to purchase.	$48,100.00
South Carolina Department of Agriculture	$595,317.11	9. Assessing Nematode Populations Damaging Bermudagrass in South Carolina crop industry in South Carolina 2) provide access of heat and humidity tole	Turfgrass nematode researchers at Clemson University will address growing concerns with pathogenic nematode populations that are damaging bermudagrass by formulating new threshold guidelines for soil populations, examining non-pesticide tools of reducing populations, and enhancing grower knowledge through novel educational programs that engage growers across the state.	$24,961.00
South Carolina Department of Agriculture	$595,317.11	10. Enhancing the South Carolina Specialty Crop Industry through Education and Trade Show Promotion	The SC Specialty Crop Growers Association in conjunction with the SC Department of Agriculture will work together to promote the specialty crop industry through a cost share program that will assist growers in attending domestic industry trade show and conferences. Increased presence of South Carolina's specialty crop industry at various trade shows and conferences will equip growers with the latest and most current research based educational information on topics such as pest management, sustainability, production practices, food safety, and regulatory issues. This proposed project will allow South Carolina growers the opportunity to develop new markets and buyers'	$34,776.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			relationships, which are both essential in expanding the specialty crop industry.	
South Carolina Department of Agriculture	$595,317.11	11. SCDA Pavilion Produce Marketing Association Fresh Summit 2020	The South Carolina Department of Agriculture (SCDA) will partner with the South Carolina (SC) Specialty Crop Growers Association, SC Peach Council, SC Watermelon Association, and SC specialty crop growers, producers and wholesalers to exhibit at the Produce Marketing Association (PMA) Fresh Summit Expo to be held in Dallas, TX October 15-17 2020. At this point in time the show is still on schedule with slight modifications necessary for safety purposes including increased hand sanitizer stations placed throughout the trade show floor. The PMA Fresh Summit is the largest produce expo in the United States and provides an exclusive opportunity for SC to gain a national and international buying audience through attendance. An SCDA Pavilion at this trade show would increase the awareness and sales potential of SC specialty crops by leveraging the brand awareness of Certified South Carolina and showcasing a variety of SC producers and products in a unified location and setting. SCDA will assist up to 7 SC specialty crop organizations to be featured in a SCDA Pavilion booth as co-exhibitors. The SCDA will continue to cover costs related to registration, booth coordination, development, production, installation and operation of the promotional display. This grant would cover a portion of the exhibitor booth fees of securing the 1,200 square footage of the booth space from PMA. This will allow for increased participation from new attendees or organizations previously hindered by the high costs associated with participating. An increased SC presence at the PMA Fresh Summit will result in a greater demand for Certified SC Grown products and increased sales for SC specialty crops.	$35,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
South Carolina Department of Agriculture	$595,317.11	12. Value-adding packaging at GrowFood Carolina: Creative, innovative investments for specialty crops in South Carolina	GrowFood Carolina, the local food hub of the Coastal Conservation League, will increase specialty crop sales by providing value-adding packaging materials to partner farmers, enabling them to meet specifications required for retail sales. Two types of clamshell-style packaging will be offered: traditional plastic shells, and recyclable cardboard clamshells from ReadyCycle. This packaging will allow for local South Carolina produce, such as peppers, strawberries, tomatoes, and mushrooms, to be sold at six Whole Foods Market locations throughout South Carolina and the nearby vicinity. Whole Foods typically does not accept unpackaged produce. The package labeling will be customized to highlight individual growers, as well as speak to the larger brand of South Carolina specialty crops. An initial test at GrowFood of this innovative packaging, which is not yet widely used nationally, much less in the southeast region, showed promising results in 2019, with a significant return on investment for a South Carolina Shishito pepper grower. Furthermore, this project will serve to elevate the presence of South Carolina products to consumers in the marketplace through creative approaches to packaging and marketing.	$22,300.00
South Carolina Department of Agriculture	$595,317.11	13. Research projects, Educational events, Demonstrations and Field Days to Educate Growers and Improve Grower Production Management Skills	Clemson University, Edisto Research and Education Center (EREC) is the applicant organization. Through research findings, demonstrations and educational events we expect to enhance the competitiveness of specialty crops through more sustainable, diverse, and resilient specialty crop systems. Growers, industry representatives and consumers will be provided current unbiased research and demonstration results which will allow them to teach others and themselves and make more sustainable production management decisions. Research, demonstrations and educational events will be conducted with the following crops and topics of interest: pumpkin varieties, sweet potato varieties, seedless and mini watermelon varieties, sweet potato herbicides, fertigation and sensor-based drip irrigation needs for sweet potatoes, watermelon and pumpkin, and soil environment enhancing products for watermelon production.	$18,138.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
South Carolina Department of Agriculture	$595,317.11	14. South Carolina Peach Advertising and Marketing	Working alongside the South Carolina Department of Agriculture, the South Carolina Peach Council requests funds to be utilized in promotion and consumer education as it relates to South Carolina grown peaches. By effectively relaying this message to consumers the association's goal is to educate consumers on where South Carolina peaches can be found across the state as well as when they are in season. This will increase the consumers knowledge about peaches and will help create demand. Through this grant new and improved marketing techniques will be utilized to improve the overall access to information on peaches and where to find peaches in South Carolina. These techniques will include social media marketing, digital advertising, increased exposure at trade shows and increased production of peach educational materials.	$30,000.00
South Carolina Department of Agriculture	$595,317.11	15. South Carolina Watermelon Promotion and Branding Improvement	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 digital advertising and social media marketing. 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 the South Carolina watermelon industry. The SCWA website is a central location to direct consumers for purchasing locations, safe handling techniques and recipes for consuming more watermelon.	$30,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
South Dakota Department of Agriculture	$393,465.55	Black Currant Product Development for Health Eating and Storage	THE STEWART/O'NEILL BLACK CURRANT PROJECT consists of two south central South Dakota growers using research and hands on experience to develop the methodology, processes and cost analysis necessary to economically create three locally produced edible black currant products for food consumption. Research of existing methodologies and processes will lead to product development. Use of documentation, sampling and test marketing will determine which product(s) is most likely to create a sales volume large enough to make mass production feasible for success. At least one product will be packaged, labeled with nutritional facts, and sold for consumption.	$37,694.00
South Dakota Department of Agriculture	$393,465.55	Enhanced Consumer Adoption Techniques for Stimulating Wholesale Markets for Specialty Crops in Rapid City's Institutional Food Kitchens	The proposed study will develop a roadmap instituted over a three-year term focused on creating a pathway for small-to-medium scale specialty crop farmers to gain access and secure food supply contracts within the institutional food markets in Rapid City, SD.	$70,610.00
South Dakota Department of Agriculture	$393,465.55	Enhancing Economic Return on Pulses Through Cultivar Selection and Ingredient Production	South Dakota State University in collaboration with the South Dakota Pulse Crop Council will complete project objectives related to enhancing economic return of pulses. Pulses such as pea, lentil and chickpea have been targeted by the food industry as a source of sustainably sourced ingredients.	$63,131.00
South Dakota Department of Agriculture	$393,465.55	Establishing a South Dakota Hop Grower's Association: Increasing Sales and Awareness of South Dakota Hops	South Dakota Specialty Producers Association (SDSPA), Hop and Barley Subchapter will increase sales of South Dakota produced hops by 250% while simultaneously promoting and increasing awareness of South Dakota produced hops. This will be achieved by developing a chapter specific name, logo, website, and social media presence for the SDSPA Hop Producer Subchapter and by conducting a targeted, direct-to-brewer marketing trip to >85% of South Dakota based breweries during the period July 1, 2020 – Dec 31, 2021.	$4,778.00
South Dakota Department of Agriculture	$393,465.55	Increasing Specialty Crop Producer Capacity through Knowledge and Aggregation	South Dakota Specialty Producers Association will provide resources, knowledge and connections through multiple platforms to champion and nurture specialty crop production, marketing and aggregation in an always-evolving environment.	$44,072.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
South Dakota Department of Agriculture	$393,465.55	Lakota Traditional Plants Specialty-Crop Market Cooperative	Patricia Hammond's Rebel Earth Farms, will partner with Re-Member and South Dakota State University Extension towards organizing and assisting 10 additional Lakota new specialty crop farmers into an informal western South Dakota specialty crop cooperative with the goal of increasing the production of Lakota herbal teas; doing research into additional traditional plants that are cultivatable and marketable; to do additional marketing research and educational outreach via farmers markets (Black Hills Area Farmers Market in Rapid City) and with chefs (such as the Sioux Chef, Sean Sherman) and restaurants in the region.	$88,178.00
South Dakota Department of Agriculture	$393,465.55	Winter pea development in South Dakota and Nebraska: winter survivability, crop management, soil health and nutritional quality	The breadth and scope of this project is fairly broad with seven primary objectives. We will gain very valuable information on: 1) which winter pea varieties have the potential to withstand the harsh winters of the upper Plains, 2) how winter peas (if they survive the winter) compare to spring varieties with respect to yield, test weight and protein, 3) how planting date affects winter survivability, 4) estimates for nitrogen fixation potential from winter peas compared to spring types and 5) if the use of microbial seed treatments can enhance winter survivability.	$27,950.00
Tennessee Department of Agriculture	$536,220.09	Assessment and mitigation of honeybee stressors across Tennessee	The Institute of Agriculture at the University of Tennessee will mitigate honeybee colony losses by assessing stress factors and using the results to develop science-based communications (factsheets, website, social media) and educational trainings (conferences, meetings, field days) for producers.	$50,000.00
Tennessee Department of Agriculture	$536,220.09	Awareness & Market Growth Development: Gatlinburg Wine Trail & Rocky Top Wine Trail	Mountain Valley Vineyards (MVV) has been producing award-winning wines with Tennessee grown grapes since 1994. It is our passion to help nurture and grow the grape farming industry in the state, with a focus on partnering directly with local farmers in our area.	$36,250.00
Tennessee Department of Agriculture	$536,220.09	Chronicling Tennessee's Specialty Crop Landscape	The University of Tennessee (Center for Profitable Agriculture) will lead the effort to chronicle some of Tennessee's existing specialty crop production, develop written information on the crops and implement various outreach and teaching events.	$50,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Tennessee Department of Agriculture	$536,220.09	Creating a competitive advantage for Tennessee blackberry growers	The University of Tennessee Institute of Agriculture will provide Tennessee blackberry growers guidelines on which characteristics are most important to consumers through sensory and consumer science methods. These findings will allow on-farm decisions to be made with the customer in mind to support growers in selecting and marketing their small fruit crops and growing their farm operations. This project will heighten the competitiveness of Tennessee growers and will provide a roadmap for growers to ensure buyers see blackberries from Tennessee as a premium product.	$23,814.00
Tennessee Department of Agriculture	$536,220.09	Establishment of Various Tree Fruit and Nut Crop in an Organic System in the Mid-South	Growing specialty crops, such as tree fruits and nuts, organically in Tennessee is a potential new endeavor that could create extra income and jobs for Tennessee. Grower interest in diversifying their farm is ever increasing. The organic industry is on the rise and will probably continue to increase in the future. There is not a lot of research or information in general on organically grown produce in Tennessee.	$23,406.24
Tennessee Department of Agriculture	$536,220.09	Expanding children's educational programs promoting specialty crop purchasing and consumption at East Tennessee farmers' markets.	Nourish Knoxville will promote the consumption of specialty crops by expanding our children's educational program, Nourish Kids, to more East Tennessee farmers' markets. The program will fund Nourish Kids Clubs at five farmers' markets outside Knox County, providing children ages 2-12 with the opportunity to try new specialty crops, to participate in educational activities about specialty crops, and to receive specialty crop-focused recipe cards and $5 each in Produce Bucks to spend on select specialty crops at farmers' markets, which builds revenue for specialty crop farmers.	$24,979.76
Tennessee Department of Agriculture	$536,220.09	Expanding markets for new and existing Vineyards, Farm Wineries and Wineries	The Winery at Seven Springs Farm will purchase a closed drum pneumatic press to allow rapid and efficient processing of grapes to support expanding business operations and provide a critical capability, custom crush, for local farm wineries.	$25,000.00
Tennessee Department of Agriculture	$536,220.09	Kid's Produce Club Takes Over Milan Farmers' Market	We recently learned of a program called "POP (Power of Produce) Club" from Grow Oak Ridge, a small-town Farmers' Market here in TN. We want to mimic that program in Milan by creating Kid's Produce Club. Kid's Produce Club will offer different activities for kids to try new fruits and vegetables and learn about Farmers' Markets, but our main goal is for kids to learn how to buy fruit, vegetables and other goods from local farmers rather than big grocery stores	$4,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Tennessee Department of Agriculture	$536,220.09	Landmark Hydroponics & Youth Training Project	Landmark Training Development Company shall obtain a hydroponics nutritional film technique (NFT) system to grow leafy green specialty crops such as lettuce and expand its youth urban farm training program.	$16,700.00
Tennessee Department of Agriculture	$536,220.09	Preparation of Baseline Constituent Studies for Natural Indigo as an Exempt Food Colorant	Stony Creek Colors, Inc., has spent recent years developing the textile market for its natural indigo dye and is preparing to move into the adjacent natural food colorants market. This market is strictly regulated both domestically and internationally, requiring a formal application to the FDA for the inclusion of farmer-grown natural indigo as a "color additive exempt for certification". This process is multi-stage and will almost certainly require an array of toxicology studies and analysis method development to ultimately determine the applicable dosages and maximum thresholds for use and constituent impurities	$25,000.00
Tennessee Department of Agriculture	$536,220.09	Providing new broccoli varieties and cultivation technology to local growers in Tennessee	Tennessee State University (TSU) will select broccoli varieties that are suitable for year-round production in middle Tennessee. Dr. Suping Zhou in the College of Agriculture will lead the project to compare 15 broccoli varieties obtained from the USDA-ARS National Clonal Germplasm Repository (U.S. DEPARTMENT OF AGRICULTURE-Agricultural Research Service). These varieties have been evaluated for one season in hoop-house on the Agricultural Experimental Station at TSU.	$25,000.00
Tennessee Department of Agriculture	$536,220.09	Specialty Crop Training Farm	Cul2vate grows and delivers Fresh, nutritional vegetables into local food insecure areas. They work in collaboration with other organizations to provide education as to nutritional information, Food Safety, And Good Agricultural Practices (GAP) to those who receive our food. All food is grown in the context of a 24-week agricultural training/educational program that targets the chronically unemployed with agriculture curriculum, basic life skills, and job readiness training. They seek to prepare the trainees for continuing in farming and/or placement with local business partners. Prior graduates of the program are now working to assist and educate current students as well as local farms in specialty crop practices that comply with Federal Food Safety Standards.	$49,050.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Tennessee Department of Agriculture	$536,220.09	Tennessee Farmers Mobile Workshop	The Tennessee Agritourism Association will research how to increase sales and maximize profits of specialty crop production. We will travel, by bus, to visit with establishments who specialize in specialty crop production across the United States. This mobile workshop will consist of 8-10 stops in four days and will be offered to our 170 members. Due to budgets, only 56 members will be able to attend this workshop. Members who wish to attend will be asked to complete a scholarship application that will be judged by a panel of non TAA persons.	$21,369.13
Tennessee Department of Agriculture	$536,220.09	Tennessee Grape and Wine Direct to Consumer Marketing Engagement	The Tennessee Farm Winegrowers Alliance (TFWA) seeks to engage in a series of consumer education campaigns for the grape and fruit varieties that grow well within Tennessee and the style of wines we create with them. With one of the largest new buying demographics in Millennials coming online, we find them shaking the traditional presentations of wine and opting for experiences in exploring new products and varieties. We will engage potential consumer through Direct experiential marketing including event activations such as wine festival, workshops, seminars, videos and webinar.	$50,000.00
Tennessee Department of Agriculture	$536,220.09	Tennessee State Parks Honey Project	Tennessee Department of Environment and Conservation (TDEC) proposes to utilize SCBG funds 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.	$23,462.00
Tennessee Department of Agriculture	$536,220.09	Urban Arboretum Development Program – Shelby Avenue, Nashville, TN	Nashville Tree Conservation Corps will enhance the competitiveness of nursery stock trees and fortify rural Tennessee's economy by installing and marketing a public arboretum where people can learn about trees, their benefits in the city, and how to purchase trees from NTCC's drop-ship, tree-farm-to-yard program, which moves trees from rural Tennessee farms directly into urban Nashville yards.	$45,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Texas Department of Agriculture	$1,589,276.20	1. Yes! Texas Has That! - Increasing Consumer And Retail Awareness Of Texas Specialty Crops	"Yes! Texas Has That!" is a marketing campaign created by the Texas Department of Agriculture – Marketing and International Trade Division (TDA Marketing) designed to increase awareness of specialty crops to consumers and retailers throughout the state. Utilizing multiple mass media efforts, the goal will be to introduce information on several specialty crop industries. TDA Marketing will also leverage the success of the GO TEXAN marketing program to increase sales of Texas olive oil and honey by promoting sales of olive oil and honey products at GO TEXAN sponsored events.	$250,000.00
Texas Department of Agriculture	$1,589,276.20	2. Healthier Living Through Hydroponics	The Uvalde County Underground Water Conservation District (UCUWCD), its partners, Texas A&M University and Texas A&M AgriLife Research (Uvalde), and collaborators, the Uvalde Nutrition Center, the Sabinal Nutrition Center, 4-H Bexar County, Uvalde Memorial Hospital and Veranda Senior Living, will partner together to improve the health and nutrition of consumers and the economic well-being of small-scale growers through education and adoption of efficient hydroponic techniques.	$167,000.00
Texas Department of Agriculture	$1,589,276.20	3. Pecan Weevil Awareness, Monitoring, Sampling, And Elimination in Weevil Free Zones And Quarantined Border Counties	The Texas Pecan Board is the checkoff program for pecans in Texas responsible to the Texas Department of Agriculture for promotion, research, education and marketing of pecans in Texas. TDA through state statue has implemented a quarantine on pecan in 249 counties because of the pecan weevil insect. To ship pecans from a quarantine area to a non-quarantine area requires treatments costing up to 6¢ per pound. It is possible with proper monitoring, sampling and verification that some currently quarantined areas may be certified "weevil free."	$27,000.00
Texas Department of Agriculture	$1,589,276.20	4. Development of Research And Training Protocols Aimed At Enabling Growers To Become Self-Sufficient In Testing Psyllids And Potatoes For The Zebra C	Texas A&M AgriLife Research, in collaboration with Black Gold Farms, is submitting a proposal on development of research and training protocols for testing psyllids and potatoes for the zebra chip (ZC) pathogen using an emerging molecular diagnostic technique. ZC, caused by the bacterial pathogen, 'Candidatus Liberibacter solanacearum' (Lso), which is transmitted by the potato psyllid (Bactericera cockerelli), has been causing substantial losses to Texas potato growers since it was first detected in the state in 2000. Currently, growers spray their fields weekly with pesticides to control potato psyllids and minimize losses to ZC.	$117,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Texas Department of Agriculture	$1,589,276.20	5. Beyond Salad: Harvesting Spinach Seed for Grain Consumption As An Additional Source Of Income	Texas A&M AgriLife, in collaboration with the Wintergarden Spinach Producer Board, have been working on developing solutions to increase the spinach industry competitiveness. Texas is one of the leading spinach-producing states in the US for both the fresh and canning markets. This proposal will evaluate spinach grain production as an additional source of income at the end of the crop cycle when producers have finished leaf harvesting as a double purpose crop by assessing yield potential, nutritional quality, and economic feasibility as an alternative source of income to the farmer. In addition, it will expand the farmer portfolio of alternative produce, increased farmed acreage and alternative fringe products. This will cushion Texas farmers against total loss, save on farm insurance costs, and expand the food industry.	$114,000.00
Texas Department of Agriculture	$1,589,276.20	6. Biochar to Improve Water Use Efficiency And Soil Resilience In West Texas	Texas Tech University (TTU) in association with “West Texas Growers and Producers Association” and “High Plains Underground Water Conservation District” will evaluate the combined effects of biochar soil amendments and deficit irrigation strategy on physiology, yield and water use efficiency of cucumber and sweet corn. The goal of the study is to develop and evaluate soil and water conservation and management strategies (and technologies) to enhance sustainable vegetable production in the groundwater-dependent agricultural production of Texas Southern High Plains. Multiple experiments will be conducted for two years at research farm of TTU to include three deficit irrigation regimes (100% ETc, 80% ETc and 60% ETc) and two biochar types (softwood and hardwood).	$72,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Texas Department of Agriculture	$1,589,276.20	7. Systematic Horticulture Operations Program Of Texas (SHOP-TX)	Through the Specialty Crop Block Grant, Texas Nursery and Landscape Association (TNLA), Texas A&M AgriLife Extension Service (AgriLife Extension) and Texas Department of Agriculture (TDA) will partner together to create a state-based nursery implementation program using the national SANC program as a guide. The SHOP-TX program will help Texas ornamental producers maintain an insect and disease clean facility and will ensure the safe movement of ornamental crops within Texas and with participating states. Industry professionals, academics and licensing agents will come together to identify the need and impact that a state-based nursery implementation program will address, the steps needed to compile educational resources and best management practices for Texas ornamental producers, develop a detailed criterion that will be practical and easy to follow, and establish outreach programs that targets Texas producers and their consumers.	$140,000.00
Texas Department of Agriculture	$1,589,276.20	8. New Tools To Ensure Genetic Purity Of Turfgrass Production In Texas	Texas A&M AgriLife Research and Extension, with project partners Turfgrass Producers of Texas and Lone Star Gold Course Superintendents Association, will enhance the production of high-quality turfgrass with genetic purity and identity to assist sod producers to produce certified sod. The turfgrass industry ranks as the number one valued agricultural crop in the state of Texas. One of the major challenges with the production of high-quality and genetically pure sod is contamination with off types arising from volunteer seed and/or viable plant parts either wind-blown or carried by farm equipment. Accurate identification of target cultivars from such contamination is essential for producing and maintaining clean certified sod. Currently, methods to identify off-types is based on visual assessment, which is qualitative in nature and difficult, especially for morphologically similar but genetically dissimilar off-types.	$80,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Texas Department of Agriculture	$1,589,276.20	9. Addressing The Challenge Of High Grape/Wine Ph Through Improved Vineyard Management Practices	Texas A&M AgriLife Extension is partnering with the High Plains Winegrowers Association to develop a set of vineyard management practices to address problems associated with high juice/wine pH, a major challenge for hot climates like Texas. Previous research conducted by Texas A&M AgriLife Extension has identified viticultural factors that directly correlate with grape acidity and this project seeks to modify current vineyard management techniques to optimize both fruit production and quality including juice pH, titratable acidity, and potassium. Researchers will work with grower/cooperators in North Texas and Texas High Plains to test a regime of modified canopy and crop management practices to determine their effectiveness in controlling acidity. Practices that prove to be most effective and economic will be communicated to members of the Texas grape and wine industry through Extension publications, websites, social media, videos, workshops and presentations.	$25,000.00
Texas Department of Agriculture	$1,589,276.20	10. Control of Listeria Monocytogenes In Processing/Packing Plants Using Antimicrobial Blue Light (ABL)	The Texas International Produce Association will partner with the Center for Produce Safety and the University of Georgia to assess using high-energy blue light for surface decontamination. The bacterial pathogen Listeria monocytogenes (Lm) can survive and persist in produce processing and packing facilities. The use of a dynamic light technology during facility down time could serve as a useful tool in preventing Listeria establishment and persistence. Blue light in the 400–470 nm range of the visible light spectrum has been shown to have antimicrobial effects against a wide range of microbes, including Listeria, and is considered safe for humans.	$144,510.00
Texas Department of Agriculture	$1,589,276.20	11. Improving Quality and Profitability Of Texas Pepper Production With Cropping Strategies And Novel Texas A&M Genetics	This proposal is being submitted by Texas A&M University in collaboration with members of the South Texas Vegetable Association. The proposed project addresses the key focus area of Plant Health as it pertains to fresh pepper production. Texas is a major chili pepper producing state. However, the economic and environmental sustainability of this specialty crop commodity is under threat from multiple challenges especially at the field production level. This project will evaluate elite selections of pepper hybrids and lines from Texas A&M University, along with novel fertility management strategies to	$121,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			reduce losses from heat, bacterial leaf spot, viruses, pepper weevils and broad mites.	
Texas Department of Agriculture	$1,589,276.20	12. Increasing Texas Strawberry Profitability Through Two Additional Years of Research and Grower Training	Texas A&M AgriLife, Texas Tech, Prairie View A&M, Poteet Strawberry Festival Association, Poteet Rotary Club, and growers will collaborate to increase sustainability and improve profitability of Texas strawberry production. Through current research and training, our TDA project resulted in an upsurge in grower numbers and acreage. This new project will: (1) define improved fertilizer strategies by variety using soil/leaf analyses combined with plant gas exchange measurements (carbon assimilation, transpiration, etc.) using LiCor 6400 XT Portable Photosynthesis Instruments to determine strawberry variety water use efficiency, and best management practices in the diverse Texas climates.	$92,000.00
Texas Department of Agriculture	$1,589,276.20	13. Developing Videos to Provide Micro-Farms With Produce Safety Education	The purpose of the Food Safety Modernization Act (FSMA) is to shift food safety regulations from a system that focuses on responding to contamination to one that focuses on preventing them. FSMA was a law enacted on Jan. 4, 2011, that authorizes the U.S. Food and Drug Administration (FDA) to take a preventative approach to food safety. The law does so by incorporating new enforcement actions that are designed to achieve higher rates of compliance with preventative safety standards. FSMA also gives the FDA the tools it needs to hold imported foods to the same standards as domestic foods. As part of FSMA, the Produce Safety rule establishes, for the first time, science-based minimum standards for the safe growing, harvesting, packing, and holding of fruits and vegetables grown for human consumption.	$45,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
U.S. Virgin Islands Department of Agriculture	$242,838.10	Project 1 - Back Yard Farmers Development Project	The US Virgin Islands Department of Agriculture (VIDOA) is seeking funding for the amount of 129,409.21 to develop a comprehensive Backyard Farmers enhancement Program, which will seek to increase access, availability and awareness of specialty crop in the US VI. recent tragedies over the past few years has reduced the availability of locally grown produce relative to the economic impact on local producers. For this reason, a significant number of homeowners have been soliciting advice and assistance from VI Department of Agriculture for assistance. This project will seek to encourage and empower the community through knowledge on how to produce, access and prepare specialty crops in the USVI.	$129,409.21
U.S. Virgin Islands Department of Agriculture	$242,838.10	Project 2 - Establishment of a Farmers Capacity Building Program	The Agriculture sector is very small in the USVI; that is, there is relatively an insufficient amount of farmers available to grow a sufficient amount of local crops, which would have had significant impact on the availability and increase access of local crops; thus, to this end VIDA seeks to develop farmers (that are at a financial disadvantage) to ramp up mass production of local crops, so that the import rate may decrease, while the Agriculture sector increases productivity. The proposed capacity building program will allow new/beginning or existing farmers to establish, enhance or promote crop production development. Certainly, competitiveness of locally grown crops will ultimately increase; the education component assures sustainability as the program will equip the participating farmers with the knowledge required to operate the farm from planting the seed, crop maintenance (pest control), harvesting and marketing.	$40,000.00
U.S. Virgin Islands Department of Agriculture	$242,838.10	Project 3 - Development of a Local Organic Pesticide from Jicama	The University of the Virgin Islands Agricultural Experiment Station (AES) and Cooperative Extension Service (CES) are collaborating to conduct research on Jicama, a tropical tuberous root legume, to evaluate extracts from different parts of the Jicama plant for the development of an organic pesticide for local use. The outcomes will be the determination of pesticidal compounds level in Jicama leaves, green pods and mature seeds; development of an extraction method for the Jicama pesticidal compounds; evaluation of the use of Jicama extracts as an organic control of insect pests; and if the Jicama extracts are successful, design a factsheet for growers describing the process for	$46,296.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			making a useful organic pesticide product from Jicama. The overall end result would be a botanical organic pesticide from Jicama plant tissues that can be locally produced and utilized by specialty crop growers.	
Utah Department of Agriculture and Food	$367,654.81	Project 1 - Improving Production Schedules and Yield of Early Season Cut Flowers in Utah: Ranunculus and Anemone	The Utah State University Department of Plants, Soils and Climate will trial high tunnel and low tunnel production practices, planting dates, cultivar selection, and pre-planting techniques that influence the overwintering success, early plant establishment, and harvest of Ranunculus and Anemone cut flower crops. These cut flowers are two of the earliest blooming, hence harvestable and profitable, options for Utah flower farmers, but the climate of the Intermountain West has made production a challenge. This research will focus on establishing thresholds for overwintering (i.e. minimum soil temperature) and spring growth (i.e. temperature and solar radiation intensity) in relation to planting dates, season extension techniques, and cultivar selection to predict the early growth and subsequent flowering, yield, and quality of these cut flowers. Developing local production guidelines will increase potential economic benefits for Utah specialty crop growers and promote farm diversification. Results will be disseminated through workshops, field days, social media, and fact sheets.	$80,216.62
Utah Department of Agriculture and Food	$367,654.81	Project 2 - Increase Awareness, Knowledge, Growth, and Consumption of Specialty Crops in Salt Lake County.	The Green Urban Lunch Box will increase awareness, knowledge, growth, and consumption of specialty crops in Salt Lake County through educational programs that engage and empower the community to grow, consume, and distribute fruits and vegetables. Our aim is to increase the consumption of fresh fruits and vegetables, especially specialty crops, among low-income seniors, cancer patients, families relying on food banks, and our community at large while fostering a community-centered approach to improving food security through the various programs we offer.	$20,703.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Utah Department of Agriculture and Food	$367,654.81	Project 3 - Identification and Evaluation of High-Yielding Pinus Edulis Native to the Four Corners as Pine-Nut Crops	Brigham Young University, in collaboration with Utah State University as a subaward, plans to identify and evaluate high-yielding Pinus edulis (two-needle pinyon pine) plants native to the Four Corners region to develop an alternative specialty crop suitable for commercial growers in orchard settings and marginal lands on tribal and non-tribal lands. Superior clones of P. edulis will be evaluated in nursery, orchard, and marginal-land sites. This work builds upon the successful results generated from a project funded to USU by SCBG in 2016 on Pinus monophyla as a potential commercial crop. Outcomes will include identifying four populations of P. edulis in the Four Corners region where high-yielding clones, which produce nutritious seeds (pine nuts), can be identified and ultimately released as commercial cultivars. We will also refine the process for grafting P. edulis scion wood to mature tree rootstock via side grafting and cleft grafting. General tasks to fulfill the outcomes include identifying superior P. edulis accessions via GPS technology and cone-scar counting (developed in the 2016-funded SCBG project of USU with P. monophyla). Seeds of parent trees of superior clones will be analyzed for their nutrient and mineral composition to fast-track their development as commercial cultivars. And as mentioned, P. edulis plants will be evaluated in nursery, orchard, and marginal-land settings with and without irrigation to determine their horticultural potential.	$47,804.93

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Utah Department of Agriculture and Food	$367,654.81	Project 4 - High Tunnels: Approach to Early and Annual Asparagus Production	Utah State University has been actively studying high tunnel production and proposes to evaluate alternative approaches to annual asparagus as well as field manipulation with tunnels to enhance early harvest and improved yields and profitability. Our request for funding from the Specialty Crops Block Grant program is to first; further evaluate if an annual asparagus system is feasible, productive and economic; second; to use high and low tunnels in mature asparagus to mitigate the effects of early frost and thereby increase productivity and economic returns; third; to carefully assess the economics of these different systems; and fourth; to share these findings with Utah's farmers through a variety of outreach approaches. The combined results of these studies will assist small asparagus growers in Utah to efficiently manage their crops for optimal productivity and profitability while not necessarily tying up land in a long-term commitment to a perennial vegetable like asparagus. Very few studies have looked at tunnel production in asparagus thus this work is of significant value particularly in an environment like Utah where spring frosts regularly slow spear growth or damage emerged spears. Findings will be disseminated to Utah's growers as they become available.	$30,613.12
Utah Department of Agriculture and Food	$367,654.81	Project 5 - 4-H Fillmore Elementary Gardening	Utah State University Extension Millard County, through a partnership with Fillmore Elementary School and implementation of the 4-H Fillmore Elementary Gardening Program, will enhance the competitiveness of specialty crops through increased access and consumption. To increase access to and consumption of specialty crops, the 4-H Millard County Gardening Program will engage Fillmore Elementary School students (grades one through five) in specialty crop experiential gardening, hands-on cooking experiences, food preservation, food donations, and student-led farm stand.	$26,043.57

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Utah Department of Agriculture and Food	$367,654.81	Project 6 - Empowering Hispanic/Latinx Community Members to Grow, Eat, Prepare, and Appreciate Specialty Crops	Wasatch Community Gardens (WCG) seeks to increase knowledge about, and consumption of, specialty crops amongst Hispanic/Latinx women and families on Salt Lake City's west side by 1) providing the parents at the Title I elementary schools in our School Garden Network with access to gardening space and education, organic produce, and healthy recipes through bi-monthly Parent Garden Club gatherings, and 2) educating Hispanic/Latinx community members about growing and eating produce that is culturally appropriate through a bilingual workshop series called Sabores de Mi Patria (Flavors of My Homeland) in partnership with Artes de México en Utah. The focus will be on vegetables and fruits that can be grown in home, school, and community gardens in Salt Lake County, with special emphasis on crops grown by indigenous peoples in the Americas, such as corn, beans, and squash.	$15,000.00
Utah Department of Agriculture and Food	$367,654.81	Project 7 - Direct-To-Consumer Sales Innovation Program	Urban Food Connections of Utah (UFCU) will work to reduce the loss of sales as a result of the ever-changing circumstances of the COVID19 crisis for specialty crop producers in Utah including the more than 80 that sell at our existing markets. We will help our specialty crop producers innovate their sales models by working with software developers to create a year-round, direct-to-consumer online sales platform for farmers, as well as training and mentoring on using websites and social media to connect and sell to Utah consumers.	$48,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Utah Department of Agriculture and Food	$367,654.81	Project 8 - Urban Shade Cloth Use and Translated Language Food Safety Resources for Utah Specialty Crop Producers	International Rescue Committee in Salt Lake City's (IRC SLC) Specialty Crop Block Grant Project (SCBGP), "Urban Shade Cloth Use and Translated Language Food Safety Resources for Utah Specialty Crop Producers," will strengthen local and regional specialty crop production and support Utah farmers, including socially disadvantaged new Americans participants beginning their farming careers. With this funding, IRC SLC will be able to expand the efforts of New Roots in Salt Lake City (New Roots SLC), a farming and food access program which provides instruction and farm incubation services for refugee and other new American farmers. This project will increase farmers in the New Roots SLC program's annual specialty crop production and resulting revenue through explorative use of shade cloth specifically adapted to the urban environment of Salt Lake County. New Roots SLC will also adapt and translate culturally relevant, linguistically accessible food safety training, resources, and signage delivered to refugee and other new American farmers in northern Utah. New Roots SLC staff and farmers will achieve project deliverables by utilizing and adapting season-extension infrastructure for summer shade cloth use and by piloting increased production and sale of sun- sensitive crops during summer months.	$64,000.00
Vermont Agency of Agriculture	$323,379.87	Project 1 - Regional Consumer Attitudes and Preferences about Vermont Maple Syrup	A major part of Atlantic Corporation's (Atlantic) work is focused on improving profitability for America's small and medium sized farms by helping them transition from supply-driven business models to demand-driven business models. We have a long history of leading public-private partnerships on major state, regional, and federal, agricultural business and economic research and development projects. This project will deliver critical market assessment and business planning tools and information to benefit the Vermont maple syrup industry. Atlantic will launch a multi-state consumer survey of product attitudes, preferences, and availability resulting in a final report and data dashboards outlining the market opportunities for Vermont maple syrup. The project objectives are consumer survey design, survey programming and implementation, statistical analysis of survey data, identifying key market opportunities, creation of final report and data	$27,140.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			dashboards, outreach to share findings and reports and measuring the metrics of impact.	
Vermont Agency of Agriculture	$323,379.87	Project 2 - Demonstrating Benefits of the Innovative Missouri Gravel Bed Rooting System for Vermont's Specialty Crop Growers	Elmore Roots nursery will pilot, demonstrate and promote utilizing an innovative gravel bed system developed in Missouri as a way for Vermont specialty crop growers, nurseries, farms and landscapers to increase transplanting success, decreasing costs and effort leading to greater profitability. This project will build upon Elmore Roots' long, substantial and recognized leadership in advancing knowledge, techniques and nursery species specifically suited for and that can thrive in Vermont's unique and challenging climate.	$29,017.00
Vermont Agency of Agriculture	$323,379.87	Project 3 - Implementing a Marketing Campaign to Increase the Competitiveness of Vermont Certified Organic Specialty Crop Producers	This project will increase sales for the 353 certified organic specialty crop producers by implementing a marketing campaign to educate consumers about how organic farming practices help to mitigate and develop resilience to climate change. The project leverages and assists a growing statewide momentum toward payment for ecosystem services by 1) building awareness of and public support for the climatic benefits of organic agricultural practices, and 2) compensating farmers for associated costs by amplifying existing consumer commitment to local food. Vital Communities will collaborate with Vermont Organic Farmers' (VOF) proposed statewide campaign by piloting the marketing campaign at sales locations in the Upper Valley region of Vermont. We will achieve this goal by creating a robust consumer education campaign and conducting it in a variety of communication channels.	$46,118.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			Compelling talking points and marketing materials for farmers will illustrate the connection between organic practices and climate change mitigation and resilience.	
Vermont Agency of Agriculture	$323,379.87	Project 4 - Soil Steaming to Manage Chickweed in High Tunnels	University of Vermont Extension will conduct research and outreach to help vegetable growers manage chickweed (Stellaria media) using soil steaming. This weed poses a widespread problem for production of winter greens in high tunnels because it reduces crop yield and requires expensive hand weeding to control. Soil steaming has been used by a few growers to control chickweed in high tunnels, and shows promise, but best practices to optimize efficacy and cost are not known. Replicated on-farm trials over three winter growing seasons will identify the optimal duration of soil steaming by quantifying effects on chickweed population, soil microbial activity, available soil nutrients, as well as costs and returns. Results and recommendations will be shared with Vermont growers through on-farm workshops, fact sheets, newsletters, and at meeting presentations.	$49,641.00
Vermont Agency of Agriculture	$323,379.87	Project 5 - Specialty Composts to Control Fungal Soilborne Pathogens in Vegetable Crops	In controlled experiments, the microbial community present in an earthworm-cured dairy manure compost suppressed multiple fungal pathogens including Rhizoctonia solani, a destructive soil-borne pathogen of vegetable crops. University of Vermont will field test this proven solution in a farm setting to assess effectiveness and adoptability by vegetable growers.	$33,193.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Vermont Agency of Agriculture	$323,379.87	Project 6 - Developing Vermont's Saffron Industry as a High-Value Crop for Small Family Farms	University of Vermont scientists at the North American Center for Saffron Research & Development (Saffron Center) and the Department of Community Development & Applied Economics will collaborate to strengthen and expand the emerging Vermont saffron industry. They will conduct a statewide outreach program, with multiple on-farm demonstration sites and extensive hands-on training to encourage adoption of saffron production among small and beginning farmers, with the goal of increasing crop revenues.	$40,000.00
Vermont Agency of Agriculture	$323,379.87	Project 7 - Increasing Community Resiliency Through Improved Access to Specialty Crops	The Vermont Agency of Agriculture, Food and Markets (VAAFM) will implement a community-oriented approach to food access and market development to foster projects and events that will increase exposure and access to local products, and specifically specialty crops, to an expanded consumer base. This project will support the development of resilient local food systems by bringing together stakeholders, facilitating food systems planning and project management, providing professional and leadership development opportunities, and increasing community awareness through educational and promotional marketing.	$74,240.76
Virginia Department of Agriculture and Consumer Services	$542,060.96	Enhancing quality of Virginia hops: Strategies to forecast cone ripeness using physicochemical and volatile markers	Virginia Tech Flavor Lab and Analytical Services Lab at the Department of Food Science and Technology propose to work in partnership, through a contract with Virginia State University to enhance the competitiveness of Virginia hops by developing tools for accurately predicting cone ripeness using physicochemical parameters and volatile markers.	$59,997.00
Virginia Department of Agriculture and Consumer Services	$542,060.96	Evaluation of disease resistant seedless table grape cultivars and cluster protection materials.	The Virginia Polytechnic Institute and State University will evaluate a total of nine disease resistant seedless table grape cultivars and efficacy of protective materials for grape clusters in designed field trials. The objectives are to evaluate newer seedless table grapes for disease resistance level and other viticultural traits, and to achieve the minimum fungicide usage for disease management to produce seedless table grapes for the fresh fruit market using a combination of the genetic resistance, cultural practices, and organic or conventional fungicide regimen.	$34,568.18

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Virginia Department of Agriculture and Consumer Services	$542,060.96	Factors that Influence the Introduction, Fate, and Mitigation of Foodborne Pathogens on Edamame	Virginia Tech will investigate microbial hazards and contamination risks associated with the growing, packing, holding, and distributing of edamame. Data generated will directly support edamame growers in developing best practices and implementing buyer driven food safety programs	$59,760.00
Virginia Department of Agriculture and Consumer Services	$542,060.96	Improve Edamame Seedling Emergence through Optimum Planting Temperature and Biological Seed Treatments	Virginia Tech proposes to study a primary concern (low seedling emergence) in edamame production. Data generated will directly support edamame growers by improving edamame quality and yield in Virginia.	$19,267.03
Virginia Department of Agriculture and Consumer Services	$542,060.96	Improve Edamame Seedling Emergence through Optimum Planting Temperature and Biological Seed Treatments	Virginia Tech proposes to study a primary concern (low seedling emergence) in edamame production. Data generated will directly support edamame growers by improving edamame quality and yield in Virginia.	$19,267.03
Virginia Department of Agriculture and Consumer Services	$542,060.96	Improving flavor and quality characteristic for Virginia blackberry as affected by foliar and shade application	Virginia Tech Flavor Lab in the Department of Food Science and Technology and Small Fruit Research and Extension Program at Hampton Roads AREC, in partnership with Agriberry Farm and Messicks Farm will seek to improve Virginia blackberry quality, sales, and sustainability by utilizing shade cloth, foliar chemical application, and determining characteristic flavor profile for well-performed cultivars.	$59,906.46
Virginia Department of Agriculture and Consumer Services	$542,060.96	Increasing Resiliency for Virginia Produce Growers through a GAP Certification Pilot Program	Virginia Tech (Strawn and Vallotton), in cooperation with Virginia State University (Carter Jr.), will develop and implement a Good Agricultural Practices (GAP) pilot program to increase the resiliency of Virginia growers and packers.	$55,000.00
Virginia Department of Agriculture and Consumer Services	$542,060.96	Local Food Hub Quality Assurance, Technical Assistance, and Market Readiness for Specialty Crop Farms	This project seeks to leverage Local Food Hub's unique position at the intersection of the marketplace and small-scale farming to meet the new challenges faced by specialty crop growers, both in the midst of the COVID-19 pandemic and into the long term. It creates new, adaptive sales channels; expands the footprint of Local Food Hub services; and creates tools to simplify recordkeeping and purchasing for small farmers.	$59,558.15

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Virginia Department of Agriculture and Consumer Services	$542,060.96	Maintaining the Virginia Wine Industry through Low Cost Education after the Coronavirus	The Virginia Wineries Association will enhance the competitiveness of Virginia wine and wine grapes by educating growers and producers on sustainability and science based tools to improve the economy by helping these small businesses survive through the litany of changes at the Virginia Wineries Association and the Virginia Vineyards Association's Conferences.	$60,000.00
Virginia Department of Agriculture and Consumer Services	$542,060.96	Microbial Quality of Water Used in Potato Packinghouse Operations, and Control Strategies	Virginia Tech will directly partner with the Virginia potato industry to investigate the microbial quality of water used in potato packinghouse operations and to subsequently develop control strategies to ensure the Virginia potato industry continues economic success. Findings will support the establishment of best practices for the use of agricultural water in potato packinghouse operations, which are critical for operations to successfully pass their Good Agricultural Practices (GAP) audits.	$59,823.00
Virginia Department of Agriculture and Consumer Services	$542,060.96	What's in Your Water? Helping Producers Understand Spray Water Chemistry for Improved Pesticide Efficacy	A team consisting of Virginia Tech researchers and Virginia Cooperative Extension (VCE) agents will engage the agricultural community across Virginia to enhance the competitiveness of specialty crops by helping growers determine the compatibility of their unique water source (well or surface water) with pesticide products used in spray applications. This effort will expand upon a pilot program initiated in several Virginia counties in 2019.	$60,000.00
Washington State Department of Agriculture	$4,651,634.78	Agricultural Leadership Development Program	Big Bend Community College (BBCC) is addressing the issue of effectively managing a diverse workforce, which is a critical challenge. With the development of the Agricultural Leadership Development Program (ALDP), a comprehensive training program for incumbent employees in the tree fruit farm industry, it will help with that challenge. There is no program in the State that provides such training. This initiative will enhance supervisory skills - increasing competitiveness for Washington's specialty crop industry. It will reduce employee turnover, increase satisfaction/well-being, safety, and productivity. Impacts to the industry will include increased efficiency, business profitability, and industry reputation. Partners in this program include Washington State Tree Fruit Association (WSTFA), Labor & Industries, SkillSource, OIC of WA, Employment Security, WSDA, and	$245,611.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			Washington State University. All partners are endorsing this program and poised to provide support.	
Washington State Department of Agriculture	$4,651,634.78	Air, Soil and Pollinators: Outreach and Opportunities for Okanogan County Orchardists	Okanogan Conservation District (CD) will enhance the competitiveness of specialty crops in Okanogan County by expanding their capacity to provide technical and financial assistance concerning sustainable practices for specialty crop production. As a result, Okanogan County tree fruit growers will increase economic return on their specialty crops, conserve natural resources, and create sustainable, diverse, and resilient specialty crop systems. Material developed through this grant will be applicable to tree fruit growers region wide. The on-farm conservation practices proposed in this project lead to improved tree health, decrease costly external inputs like water, and increased marketing opportunities towards consumers.	$226,304.00
Washington State Department of Agriculture	$4,651,634.78	Assessing the Economic Contributions of Washington's Tree Fruit Industry and the Important Role of Exports	The Washington Apple Commission seeks funding to develop an Economic Impact Study for the Northwest Tree Fruit Industry – apples, pears and cherries. This study will evaluate the impact of the three commodities on local, state and federal economies individually and as a group in the areas of tax revenue, labor and direct and indirect economic benefit. Findings will be used to assist in commenting on state and federal rule proposals (including impacts on small businesses), provide supporting data around public and private investments related to the tree fruit industry, attract investments from other sectors serving the industry, and secure funding from federal export development programs such as the Market Access Program. This information will be used by contracted economists to develop the economic impact model for the industries using the IMPLAN model. A	$81,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			final analysis and report will detail the study findings including value of output, employment, tax and related revenues, generated income, and other key impacts for other commodities.	
Washington State Department of Agriculture	$4,651,634.78	Building Capacity and Support for PNW Radicchio Production Through Market Expansion and International Exchange	Washington State University Food Systems Program (WSU FSP) and the Culinary Breeding Network (CBN) aim to establish radicchio as a staple leafy green in Pacific Northwest production systems. The demand for year-round fresh produce has increased throughout Washington. This is evident in the number of farmers markets extending into the winter months and winter-specific CSAs. This new interest offers farmers a source of income during a time of year that is traditionally low income and employee retention when they would normally have to lay off workers. The project goals are to: 1) create a PNW Radicchio Association; 2) increase awareness and consumption of radicchio through education and culinary events; and 3) develop opportunities for international exchange with members of the PNW Radicchio Association and Italy to learn about production techniques, business relationships with radicchio experts, growers, seed companies and plant breeders for expansion of production in the PNW.	$249,750.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	$4,651,634.78	Building Skills, Networks and Markets to Expand Organic Specialty Crops	Organic Seed Alliance's goal for this project is to help beginning and established organic and specialty crop seed producers, including socially disadvantaged producers, address production, processing, economic, and marketing challenges and assess future needs for training and research. To reach this goal Organic Seed Alliance will engage stakeholders to assess needs, provide targeted networking and educational resources, and host two WA Organic Seed Summits. Project deliverables include a WA Organic Seed Resource Directory tied to promotion of the existing organic seed producers' database, and a Specialty Seed Processing Guide and videos. The online outreach and Seed Summits will assess needs and deliver workshops to train producers on organic seed processing, economics, pathology, marketing, and contracting. We will build a statewide network of organic seed producers, educators and seed industry to advance seed knowledge, foster peer to peer learning, and build the market relationships necessary to expand organic and specialty seed production. An estimated 200 specialty crop producers will benefit through direct participation and access to educational and networking resources. We will assess project impacts through surveys, interviews, and queries on increases in seed sales over the project period.	$130,434.00
Washington State Department of Agriculture	$4,651,634.78	Developing a Phenology-Based Recommendation Program for Pear Psylla	Washington State University's Tree Fruit Research and Extension Center will develop a phenology-based management tool for pear psylla within the Decision Aid System (DAS). Pear psylla remains the most challenging pest of pears in the PNW. A DAS phenology model for pear psylla was recently completed but is of limited use without complementary management recommendations. This project will expand the pear psylla phenology model into a functional decision support tool for pear growers. We will determine the optimal degree-day timings for insecticide and kaolin sprays based on psylla life-stage susceptibility, residual efficacy, and risk potential to natural enemies. We will also incorporate specific recommendations for cultural psylla controls including summer pruning, tree washing, and reflective ground covers. Finally, we will test phenology-based management programs against grower standard programs in large commercial plots. We expect the phenology-based program will save pear growers at least	$249,926.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			25% in costs by reducing insecticide sprays and lowering damage. Costs and injury will likely decrease further in following seasons as biological control increases.	
Washington State Department of Agriculture	$4,651,634.78	Developing a Washington Blueberry Market in Southeast Asia	The Washington Blueberry Commission will manage a program to increase the export of fresh and processed blueberries to Malaysia, Singapore, Thailand, Philippines and Vietnam. Currently, WA exports less than one million pounds to these countries collectively. WA gained fresh access to Vietnam in 2019 and will gain access to the Philippines in 2020. As of the submission of this proposal, WA will have full access (fresh and processed) to all five countries with zero to low tariffs. Based on a previous WA outreach effort, it is clear there is strong interest in the health, nutrition and flavor of blueberries in these countries. A limited 2019 marketing effort in promoting WA fresh blueberries in Vietnam was very successful. We propose to hire an in-country marketing representative to promote retail, food service and ingredient use of fresh and processed blueberries in these five countries. When possible, this would be coordinated with the Oregon, California and national blueberry organizations. This effort would involve fruit importers, retail demonstrations and point of sale materials, technical outreach to manufacturers. This would be a three-year project. It is our goal to increase Washington state exports by more than 400%, which equates to more than four million pounds of blueberries exported to southeast Asia by the end of 2023.	$240,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	$4,651,634.78	Domestic Promotion of Washington Asparagus	The Washington Asparagus Commission (WAC) endeavors to deepen its marketing efforts of Washington Fresh Asparagus during its peak harvest season of April to June within its Northwest and Northern Californian feeder markets, gaining awareness with the end goal of increasing consumer demand for Washington Fresh Asparagus. Import competition continues to challenge local market share at retail and labor costs continue to increase. We have product to sell and a demand to cultivate. As the Washington asparagus industry expands its marketing efforts to drive demand, the industry can substantiate a price increase, which in turn helps the industry stay competitive. Expanded marketing becomes possible through the SCBG. Our goal for this grant is to build on WAC's positive momentum. We would use the SCBG funds to deepen our marketing programs in the same geographic footprint along the I-5 corridor to Portland, Ore. as well as inland to Spokane/Coeur d'Alene and expanded marketing in Northern Calif. As before, our effort in each region would be commensurately scaled by population.	$150,000.00
Washington State Department of Agriculture	$4,651,634.78	Elevating Bilingual Land Access, Financial & Employment Training & Technical Assistance for Experienced Beginning Specialty Crop Producers	Viva Farms (VF) and partners, PCC Farmland Trust, American Farmland Trust (AFT) and WSU Skagit Extension will deliver scale and approach appropriate, bilingual land access, financial and employment training and technical assistance for experienced beginning specialty crop producers and stakeholders in the north Puget Sound Region. Project outcomes are to enhance the competitiveness of specialty crops through 1) Increased awareness of and access to farmland and 2) Building greater capacity of sustainable employee and financial practices resulting in increased production, efficiency, yield and economic return as well as reduced inputs and conservation of resources.	$250,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	$4,651,634.78	Enhancing the Competitiveness of Washington Peas in a Plant-Based Protein Market	Led by an interdisciplinary, highly collaborative Washington State University (WSU) team with expertise in plant breeding, molecular genetics and bioinformatics, this project will boost the competitiveness of Washington peas in the plant-based protein market by developing new winter peas with high protein concentration, characterizing regulated genes, and developing low-tech, breeder-friendly molecular markers. Breeding new winter peas for Washington with high protein concentration is imperative to meet the skyrocketing growth of the pea protein market. In this project, we will integrate marker-assisted selection with traditional breeding to introduce alleles associated with high protein concentration into two upcoming food quality winter pea cultivars, identify functional genes for high protein concentration and develop breeder-friendly molecular markers that can be used for routine marker-assisted selection in pea. This study will benefit the Washington pea industry by providing growers with sustainable rotational alternative-high protein and food quality winter peas.	$248,928.00
Washington State Department of Agriculture	$4,651,634.78	Epidemiology of the X-Disease Phytoplasma	Washington State University researchers aim to determine the epidemiology of the X-disease phytoplasma, the causal agent of little cherry disease. This pathogen has reached epidemic levels in the state of Washington, and is causing significant economic loss to cherry, peach, nectarine, and plum growers for the only disease management approach is removal of infected trees; the leafhopper vector species are prolific, highly mobile, and can acquire the pathogen from orchard trees or a wide range of weedy hosts. Effective control has therefore proven elusive. We will first examine whether there are host-specific patterns for the X-disease phytoplasma using sequence-based technologies to identify genotypes. This will show whether there is segregation by host or geography in both the orchard and extra-orchard environments, allowing us to ascertain which hosts transfer pathogens in an area. Next, we will study the feeding preferences of the leafhopper vector species through surveys of insect incidence on different host species, and support this with gut-content analysis to confirm which species the vectors have been feeding on. Finally, we will combine the geographic, genotypic, and leafhopper host preference data to build a model that will aid in developing targeted control	$249,359.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			measures to disrupt the phytoplasma-leafhopper-host dynamic and reduce the likelihood or recurring X-disease epidemics in Washington stone fruit.	
Washington State Department of Agriculture	$4,651,634.78	Evaluating the Effect of Soil Fumigation and Cover Crops on Soil Health in Potato Fields	Oregon State University-Hermiston Agricultural Research and Extension (OSU-HAREC) researchers will lead and execute this project. The Columbia Basin is one of the most important potato production regions for Washington. Soil fumigation is a common practice before planting potato fields in order to control nematodes and soil-borne diseases, but its impact on soil health and soil quality are largely unknown. Meanwhile, some growers have used cover crops before potato planting, but the benefits and guidelines have not been quantified yet. This project will address these issues by conducting a survey from the representative fields, together with field trials in OSU-HAREC. Our objectives are to: 1) evaluate the effect of soil fumigation on soil health, 2) evaluate the effect of cover crop on the soil health of potato fields, and 3) determine the interactive effect of soil fumigation and cover crop on nutrient availability. The research findings will fill the knowledge gaps in understanding the impact of soil fumigation and cover crop soil health and provide timely information to growers in order to sustain potato production in the Columbia Basin region.	$232,138.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	$4,651,634.78	Market Access in the Time of COVID-19: Supporting Adaptive Strategies for Local and Direct Marketing Specialty Crop Producers	Washington State Department of Agriculture Regional Markets Program will assist regionally marketing farms to adapt their marketing strategies and business models to access market channels altered by the pandemic with business coaching, e-commerce services and support, professional services, market-readiness and food safety technical assistance, and farm to consumer education and promotion. A key component of the program is the offering of a cost share for participating specialty crop farms for establishment of an online presence and ecommerce capacity or for a successful GAP/GHP audit. These are two consistent and significant barriers that direct marketing specialty crop farms in Washington face as they seek to adapt and access new market channels.	$220,473.90
Washington State Department of Agriculture	$4,651,634.78	New Tools for Improving Biological Control of Pear Psylla by Trechnites Parasitoids	USDA-Agriculture Research Service (Wapato, WA) will develop grower-friendly methods for improving biocontrol by Trechnites. Our objectives are to (1) develop a grower tool for use in estimating parasitism levels, (2) determine the diversity of Trechnites parasitoids in the U.S., and (3) identify volatiles in psylla honeydew that attract Trechnites to its host. These objectives will be met by adapting our new Trechnites monitoring tools to predict actual parasitism rates and thus psylla mortality rates, by creation of a large-scale Trechnites sampling program in orchards and in Trechnites habitats neighboring orchards, and by identifying and synthesizing Trechnites attractants for use as lures. Completing these objectives will help Pear psylla is the most serious arthropod pest of Washington pear and is responsible for half of pest management costs. The current, pesticide-reliant psylla management program is failing growers due to pesticide resistance. Our ongoing research efforts have developed new Trechnites monitoring tools, but also identified key knowledge gaps that must be addressed for biocontrol to succeed.	$245,974.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	$4,651,634.78	PMA Booth for WA State Specialty Crop Producers	The Washington State Department of Agriculture (WSDA) will coordinate a Washington Pavilion for members of Washington's specialty crop industry to exhibit at two consecutive Produce Marketing Association (PMA) Expos: New Orleans, Louisiana in 2021 and Orlando, Florida in 2022. PMA is held on the West Coast once every four years. While the West Coast show has a strong Washington presence, the other shows do not. In order to help Washington specialty crop businesses, continue to grow their footprint in other markets, both foreign and domestic, WSDA will coordinate booth space for multiple companies and organizations and will provide meeting space for holding meetings with potential buyers. The objective of this project is to grow Washington State's presence at PMA during years the Expo is not held on the West Coast, with an outcome of increased sales for participating companies.	$150,000.00
Washington State Department of Agriculture	$4,651,634.78	Production of Consistent Quality Fresh Sliced Pears	Washington State University will develop a market-ready fresh sliced pear product that will provide a novel, healthy, and convenient option for consumers, while increasing revenues of WA and Northwest US pear growers and packers. Previously, with SCBG, USA Pears and WTFRC support, it was determined that 'D'Anjou' pear fruit are best for slicing and that consumers are willing to pay a premium for a high-quality fresh sliced product developed using 1-MCP pears that are sliced and ripened with a ripening technology patented by WSU (WSU-RC). The next step to bring sliced pears to the market is to determine the optimal modified atmosphere (MA) packaging, which ensures high-quality with reduced browning, retains pear aroma, and extends shelf life.	$249,883.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	$4,651,634.78	Validation of Sanitizer Disinfection of Wash Water in Dump Tank Operation of Apple Packing Lines	The Center for Produce Safety will partner with Washington State University to provide data on the effectiveness of antimicrobial treatments for dump tank water systems used in apple packing. The overall goal of this project is to assess and validate critical operating parameters for different sanitizer treatments against L. monocytogenes in dump tank water under commercial apple packing conditions. The efficacy of chlorine and PAA used at common industry concentrations will first be evaluated alone or in combination with generally recognized as safe (GRAS) food ingredients against L. monocytogenes in a simulated dump tank water system with variable organic load levels. Disinfection with selected sanitizer treatments in dump tank wash water will then be verified and validated in four commercial apple packing lines. The data collected will inform apple producers on the practical efficacy of antimicrobial interventions within dump tank and flume systems under commercial packing conditions.	$250,000.00
Washington State Department of Agriculture	$4,651,634.78	Vancouver Farmers Market Community Supported Agriculture Program	The Vancouver Farmers Market (VFM) is a 501c6 nonprofit organization running the largest farmers market in Southwest Washington. The market runs Saturday and Sunday, March through the end of October and is home to a membership of 185 vendors. In 2019 we saw an estimated 420,000 customers, an increase of 65,000 from the previous year. As downtown Vancouver continues to grow at a rapid pace with no plans for development of a grocery store, the market is becoming an increasingly important destination for direct sales of specialty crops. The Vancouver Farmers Market Community Supported Agriculture (CSA) Program is an opportunity for community members to invest in a share of specialty crops grown by local Washington farms by committing to purchase a season's worth of fresh produce sourced from VFM vendors. By running a market-wide CSA, the VFM can offer farmers an easy, efficient way to sell fruits and vegetables in bulk and help get their crops into the hands of new customers. By offering a CSA, we keep Washington crops competitive in a crowded marketplace of subscription boxes and grocery delivery options. The VFM will conduct outreach to local residents and businesses to sell CSA shares through an online platform, coordinate the purchase of produce from vendors,	$61,405.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			pack boxes and create content that increases the customer's consumption and success with Washington grown specialty crops.	
Washington State Department of Agriculture	$4,651,634.78	Washington Ag History for Specialty Crops	The Washington Farm Bureau believes that all Washingtonians should have a working knowledge of the history of our state's agriculture and its impact on our way of life. To this end, Washington Farm Bureau, HistoryLink, the Washington State Historical Society and North by Northwest have joined forces to create the Washington Agriculture History Project. The Farm Bureau will serve as the applicant organization for this grant and will assist with direction on this portion of the overall project. Our goal with this project is to tell the rich history of Washington agriculture to a new generation through articles, videos, artifacts and school curriculum. Our collaborative group will design, compile, create and produce multiple stories for the public about the history of irrigation in Washington and thus, the history of many specialty crops in our state. This project includes working with schools as well as other venues to share this important story. The materials we build will be available for free to schools, educators, students and consumers. By working with other partners, such as the state Office of Superintendent of Public Instruction, we will efficiently and effectively distribute this information throughout the school system. The impact of	$50,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			this portion of the project will be amplified by other components developed with outside funding, such as curriculum units and additional articles and videos.	
Washington State Department of Agriculture	$4,651,634.78	Washington Native Plant Probiotics for Increased Sustainability & Climate Change Adaptation of Specialty Crops	University of Washington's Professor Doty, in collaboration with Washington State University Professor Lee Kalcsits and Extension Specialist Bernardita Sallato, aim to optimize natural bioinoculants for the Washington State specialty crops apple and cherry, for reduced inputs of fertilizer and water. We will test a suite of our bioinoculant strains for improved crop growth and health under greenhouse conditions with reduced fertilizer and water regimes, monitoring the plants for nutrient acquisition, physiological parameters, and microbiome responses. In the final year of the grant, we will begin field testing with the ultimate goal of providing effective, resilient organic and environmentally sustainable production of specialty crops in Washington State.	$240,680.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Washington State Department of Agriculture	$4,651,634.78	Washington Red Raspberry Baking Collaborative	The Washington Red Raspberry Commission (WRRC) is seeking grant funds to build demand for Washington Red Raspberries. A prime opportunity to do so is in the baking category. The project will create a network of influential bakers who understand, value and use frozen raspberry formats in baking with the ultimate goal of increasing the number of available bakery products using frozen raspberries. To achieve this, the WRRC will develop a special innovation and training program for bakers to better understand and use Washington red raspberries in baking. The curriculum developed for the innovation workshop will then be used in a series of tactics to reach a broader audience, further extending the reach of the many benefits of baking with Washington Red Raspberries.	$250,000.00
West Virginia Department of Agriculture	$302,257.72	Project 1 - Evaluation of Asparagus as a U-Pick Commercial Crop for West Virginia	Asparagus has a very strong demand in most farmers' markets across West Virginia. West Virginia University Extension will partner with commercial producers to promote production and marketing of U-Pick asparagus in West Virginia. WVU Extension will evaluate new hybrid varieties of asparagus for commercial U-Pick marketing in West Virginia. In addition, production practices which extend the traditional harvest season will be investigated to determine how the harvest season can be synchronized with U-Pick strawberries at two commercial farms in West Virginia.	$16,605.88

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
West Virginia Department of Agriculture	$302,257.72	Project 2 - Improved Bitter Pit Management on Honeycrisp Apple in WV Orchards to Facilitate Better Marketing	Honeycrisp is a major apple variety grown in northern apple-producing states in the US including WV. Due to the high consumer demand generated by its unique crispy texture, apple growers get a much higher wholesale price on 'Honeycrisp' than most other varieties ($600 to $1,000 vs. $125 to $300 per standard bin). However, 'Honeycrisp' fruit is very susceptible to bitter pit, a physiological disorder related to calcium (Ca) deficiency that seriously affect marketability of fruit. Based on reports from packing houses, industry representatives, and fruit extension agents from major apple growing states, it is estimated that growers lose about 15–25% of the 'Honeycrisp' crop to bitter pit on an average and up to 60–80% in extreme cases causing significant economic losses to the Northeast apple growers and the entire US apple industry (Cheng and Sazo, 2018). Honeycrisp apples are the hardest to grow and the most prone to numerous abiotic and biotic stresses. Genetic factors related to high susceptibility of 'Honeycrisp' to bitter pit is not well understood. It is endemic to the 'Honeycrisp' and varieties with genetic background of 'Honeycrisp'. Although growers pay attention to the risk factors that impact the disorder and follow existing recommendations, complete control of the problem is hard to achieve. Even low severity of bitter pit incidence makes apples unmarketable. In some cases, bitter pit may not be evident at harvest but develops in stored fruit and can result in extensive post-harvest losses in storage.	$25,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
West Virginia Department of Agriculture	$302,257.72	Project 3 - Crowdsourcing to Enhance Adoption of Produce Safety Applications	West Virginia State University Extension Service (WVSUES) will enhance specialty crop production among limited resource farmers through training, implementation and crowdsourcing of data relevant to strengthening participation in precooling methods to mitigate field heat and initiate a cold chain on the farm. WVSUES's Cold Chain program has and continues to provide limited resource farmers access to technology and training that positively impacts the production of specialty crops, elevates the value of those crops and increases the market share of those who participate. Leveraging successes through the crowdfunding mechanism, this project generates relevant data created by the producers themselves while applying simple yet effective methods to specific perishable commodities. Those data will in turn be analyzed and used for continued outreach and training purposes. This process will enhance peer-to-peer transfer of knowledge, provide guided oversight of precooling applications, track product loss ratios and monetary value of each method with a goal to increase sales and market share among the up and coming pool of vegetable farmers in the state. The result is an increase in precooling participation, development of a beginning farmers' handbook and field guide and increased production of specialty.	$28,301.00
West Virginia Department of Agriculture	$302,257.72	Project 4 - West Virginia Log-Grown Shiitake Mushrooms: Enhancing Training and Producer Networks Across the State	WVU DFNR in partnership with WVU ES-ANR will expand the production of log-grown shiitake mushroom across the state and will increase the transparency, number, and strength of shiitake mushroom grower networks. Beginning shiitake mushroom production workshops will be held in 20 counties throughout the state. In total at least 400 people will be trained in shiitake mushroom production. Participants of these workshops will be asked to provide personal and commercial production information throughout the life of this project. After the initial workshops, advanced topics in best practices will be featured at county-based seminars and at the WVU Small Farms Conference. The economic impact of the potential expansion of shitake mushroom production will be estimated. After the end of the project period, county agents will continue to facilitate shiitake mushroom seminars for personal and commercial producers that should lead to better	$61,701.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			opportunities for groups of producers to break into larger or more lucrative regional markets.	
West Virginia Department of Agriculture	$302,257.72	Project 5 - Enhancing Specialty Crop Competitiveness in WV Craft Beverage Production	This project will address access to West Virginia fruits, herbs, and other brewing and distilling stock (with a specific emphasis on blueberry, blackberry, and strawberries which have potential impact) in order to provide diversified crop sales to small farmers in West Virginia through the craft beverage industry. This project aims to increase the number of selling relationships among beverage makers and farmers throughout the state through a series of educational programs targeted to each group and also providing regular interactive opportunities between these two groups. The Robert C. Byrd Institute and our partners at Eastern WV Community and Technical College, Unlimited Future, Inc., and the Wild Ramp will coordinate a series of educational programs and on-going one-to-one meeting with specialty crop farmers and craft beverage producers to connect them for new and diverse business opportunities.	$45,298.00
West Virginia Department of Agriculture	$302,257.72	Project 6 - Improving Vintage Tomato Varieties with Pest Resistances to Enhance WV Grower Success and Profitability	West Virginia State University Research and Development Corporation will improve three vintage tomato lines by incorporating modern pest resistances while maintaining the plant and fruit type of the vintage line. This will be done by conventional backcross breeding the resistance(s) into the vintage lines followed by selecting progeny with the desired resistances using molecular markers. The selected project will be evaluated for plant and fruit qualities against the vintage type. To evaluate the degree of vintage DNA in the selected progeny background selection will be accomplished by SNP genotyping. Two	$74,527.19

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
			generations of selection will be undertaken with selected lines evaluated by local growers for possible release.	
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	Assessing Mass Trapping for the Management of Social Wasps in Wisconsin Vineyards	The University of Wisconsin will assess the use and optimization of mass trapping as an environmentally friendly and sustainable option for the management of social wasps in Wisconsin vineyards, and provide new recommendations to Wisconsin grape growers.	$75,831.50
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	Cultivate the Crunch: Educating Wisconsin Apple Growers to Increase Farm to Institution Sales	The Center for Integrated Agricultural Systems at UW-Madison will increase sales of Wisconsin-grown apples to Wisconsin institutions (K-12 schools, hospitals, early care centers, and colleges) by leveraging the Great Lakes Great Apple Crunch to provide direct training, technical assistance, and outreach materials to the state's apple growers and supply chain partners.	$40,382.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	Detection, assessment, and risk mitigation for viruses affecting the Wisconsin iris industry	The University of Wisconsin-Madison will partner with the Commercial Flowers Growers of Wisconsin and Wisconsin Department of Agriculture, Trade, and Consumer Protection to conduct research on the biology, risk, and management of potyviruses affecting Wisconsin iris production and disseminate this information to growers through outreach events and materials.	$50,000.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	Detection, biology, and management of soft rot bacteria in Wisconsin seed potato production	The University of Wisconsin-Madison, in partnership with the Wisconsin Potato & Vegetables Growers Association and Wisconsin Seed Potato Certification Program, seeks to mitigate threats posed by emerging black leg and soft rot pathogens to the Wisconsin seed potato production industry by investigating the biology, epidemiology, and management of bacterial pathogens that cause these diseases.	$91,629.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	Exploring use of thermal imaging in potato post-harvest storage	The University of Wisconsin-Madison will perform a storage study at the UW Hancock Storage Research Facility, as well as to conduct on-farm surveys to explore the use of thermal imaging technology to manage potato post-harvest storage, and provide preventative strategies to maintain long-term storage quality and reduce unnecessary economic loss caused by rotting hot spots.	$63,819.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	Improving resistance to Cercospora leaf blight in table beet through genetics and crop management	The University of Wisconsin-Madison will investigate new genetic and chemical control options for Cercospora Leaf Spot disease of table beet in both conventional and organic production systems in Wisconsin and share results with stakeholders through field days, publications, and presentations at farmer and industry meetings.	$69,181.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	Increasing Elderberry Growers in Wisconsin through Experiential Training and Cooperative Development	Sheryl Scott will bring together beginning farmers, including women, in Southwest Wisconsin and 1) provide experiential training from experts in growing and marketing elderberry and 2) coordinate discussions on developing an elderberry growing hub/cooperative to support an economically sustainable increase in elderberry production, processing and sales.	$24,871.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	Increasing the Demand for Apples that are “Flavored by Wisconsin”	The Wisconsin Apple Growers Association will increase the demand for and sales of Wisconsin apples through a targeted “Flavored by Wisconsin” campaign that promotes our apple heritage and diversity while building on our product’s reputation for quality and versatility.	$47,989.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	Peer-to-Peer Labor Management Training for Diversified Organic Vegetable Producers	FairShare will work with farmers and organizational partners to address the complex labor management needs of diversified organic vegetable growers with a peer-to-peer training program designed to help farmers attract workers, manage labor effectively, strengthen financial viability, and improve their quality of life.	$44,050.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	Predicting aphid flight dynamics to limit the spread of Potato virus Y: a non-persistently transmitted viral pathogen of seed potato.	University of Wisconsin-Madison, Vegetable Entomology Research Program (https://vegento.russell.wisc.edu/), in association with the Wisconsin Seed Potato Certification Program (WSPCP, https://seedpotato.russell.wisc.edu) and the Integrated Pest and Crop Management Program (https://ipcm.wisc.edu/), will develop accurate aphid flight phenology models to increase the precision and timing of IPM-based, decision-making to limit the transmission and spread of a non-persistent viral pathogen in seed potatoes, Potato virus Y (PVY).	$99,684.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	Strengthening Commercial Vegetable Production in Northern Wisconsin	UW-Extension, in cooperation with producers in the Lake Superior region of WI, will conduct vegetable variety trials in both the field and in high tunnel greenhouses to improve vegetable production, profitability, and quality in northern Wisconsin.	$97,174.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	Study of wild bergamot as a specialty crop	The University of Wisconsin-Whitewater will investigate the wild bergamot plant as a specialty crop in Wisconsin by conducting a market and feasibility study and creating a business and operating plan along with the Oneida Nation.	$23,711.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	Testing Effectiveness Of Lithium Chloride In Nucleus Colonies Under Field Conditions For Its Ability To Control Varroa Destructor, A Devastating Paras	Dr. Brad Mogen is requesting a one-year funding extension request to compare the effectiveness of lithium chloride salt treatment to standard varroacide treatments applied in field conditions throughout the beekeeping season and the final overwintering success of treated hives and to disseminate results to stakeholders at state and regional beekeeping meetings.	$28,225.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	Testing New and Novel Products to Stop Phytophthora Rot	The Ginseng Board of Wisconsin (GBW), representing multi-generational growers, new growers, and growers from the Hmong community (42% of the total), seek relief from destructive Phytophthora rot which has become exacerbated from recent rainy growing seasons, resulting in crop loss, by testing fungicides and biorationals, determining if the pathogen has developed resistance to a newer fungicide (fluopicolide), demonstrating successful control programs via commercial field plots and educational programs with the goal of improving ginseng root quality, yield, and revenue.	$96,448.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	The effect of landscape and climate variability on patterns in honeybee hive health: Leveraging multi-year, state-wide honeybee hive inspection data	The Gratton Lab at the UW-Madison will develop a better understanding of how patterns of honeybee hive health and success vary across the state of Wisconsin due to variations in surrounding landcover and local weather conditions in order to develop evidence-based recommendations for beekeepers to keep their bees healthy, and will disseminate results to stakeholders through grower meetings and printable materials.	$99,118.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	The effects of deicing salts on prairie forbs and grasses and the use of woody plants for living snow fences	Laura G. Jull, Ph.D., Associate Professor and Woody Ornamentals Extension Specialist will investigate and share with the Green Industry stakeholders, WI-DOT, WI-DATCP and WI-DNR the effects of deicing salts on prairie plants planted along highways, and woody plants and prairie grasses to be used as living snow fences near highways; thus, reducing blowing and drifting snow and increasing the demand and use of nursery crops throughout the state.	$99,164.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	The Forgotten Superfruit: Expanding Black Currants in Wisconsin	The Savanna Institute will stimulate market demand, supply chain development, and on-farm production of black currants in Wisconsin by educating growers and the public via field days, taste evaluations, recipe and product development, and online and print resources.	$50,000.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	Wisconsin Cranberries promotion upgrade and expansion	The Wisconsin State Cranberry Growers Association will increase public awareness and favorability of the cranberry industry in the state by creating display materials and engaging, educational content to share on multiple platforms.	$60,000.00
Wisconsin Department of Agriculture, Trade and Consumer Protection	$1,291,094.92	Wisconsin Harvest of the Month	The University of Wisconsin-Madison Division of Extension Institute of Health and Well-Being will increase the amount and variety of Wisconsin-grown fruits and vegetables provided in schools by developing a statewide Farm to School Harvest of the Month program featuring 24 Wisconsin specialty crops and including standardized promotional and educational materials, statewide training resources, and validated evaluation tools.	$25,000.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Wyoming Department of Agriculture	$341,159.26	Assessing Native Legumes for Environmental Landscaping and Horticulture through Plant Toxicity Surveys and Field Studies	The University of Wyoming, in collaboration with the USDA Agricultural Research Service Poisonous Plant Research Laboratory in Utah, will investigate the potential for commercial cultivation of two native legumes, Lupinus argenteus and Oxytropis lambertii. The objective of this project is to identify suitable seed sources of native, nitrogen-fixing species with a broad range of applications in horticulture, soil and site remediation, and pollinator health. The protocols developed for assessment and propagation of these species will lead to a program to identify horticultural varieties of multiple native legumes and provide resources for producers to commercially increase and market these specialty crops.	$42,109.00
Wyoming Department of Agriculture	$341,159.26	Evaluation of Papa Criolla Potato in Rotation with Pea in Wyoming	The University of Wyoming will evaluate available and promising genotypes/cultivars of papa criolla potatoes in the Wyoming environments for the phenotypic adaptability and stability for growth and yield. The study will be conducted at the University of Wyoming James C. Hageman Sustainable Agriculture Research and Extension Center under irrigation in rotation with peas. Papa criolla will also be planted in the high tunnel. Selection will be made of well-adapted, high performing papa criolla genotypes/cultivars that will be suitable for Wyoming and perhaps neighboring states.	$46,985.00
Wyoming Department of Agriculture	$341,159.26	Greenhouse Workshops on Construction and Use for Specialty Crop Producers for Season Extension	Central Wyoming College's Alpine Science Institute (ASI), Wind River Farm to Plate (WRF2P) and the Riverton Community Garden will host four hands-on workshops led by UW Extension educators to learn how to construct, maintain and use the domes to grow and learn about the benefits of season extension for growing specialty crops as well as increasing the variety of fruits and vegetables that can be grown. The ASI hosted dome construction workshops will serve beginning farmers participating the ASI's Crop Production Practicum who are learning farming skills to become successful producers in Wyoming's challenging climate extremes. It is the aim of this project to support increasing community interest in growing produce, self-sufficiency, and health and wellness benefits through low-cost, greenhouse structures and encourage the adoption of their use throughout the Fremont County.	$29,917.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Wyoming Department of Agriculture	$341,159.26	Screening and Developing Dry Bean Lines for Reduced Input-High Profitability Systems	A crop physiologist and plant breeder (both affiliated with the Department of Plant Sciences at the University of Wyoming) will collaborate on a project to generate and identify existing or new dry bean variants that produce profitable yield under low soil fertility conditions. This project will focus on three objectives. The first objective will be to identify genotypes that require less soil phosphate (P) than is currently recommended. The second objective will be to identify genotypes that experience little or no harvest loss upon direct harvest. The third objective will be to select and advance genotypes that mature early but do not lodge (upright stature is preferred, overly prostrate is not preferred). Due to the risk of late September frosts, Wyoming dry bean producers have clearly expressed to us that new line development should focus on early maturity. Overall, we intend to generate novel varieties or provide data that will allow Wyoming dry bean producers to grow existing varieties that will improve net profitability on the farm.	$45,309.00
Wyoming Department of Agriculture	$341,159.26	Specialty Crop Producer Season Extension Grants	Wyoming Department of Agriculture will award six small grants to extend the growing season of specialty crop producers. This will help improve specialty crop production problems associated with Wyoming's short growing seasons. The results will be shared with others through producer publications, meetings and/or farm days. Six season extension grants not to exceed $5,000 will be awarded to eligible Wyoming producers. They are designed to take some of the financial risk away from local specialty crop production. The projects may include high tunnels, low tunnels, geodesic dome greenhouses, row covers or other methods that help increase knowledge of season extending local specialty crop production.	$49,008.00

Organization	Amount Funded to Organization	Project Title	Description	Project Budget
Wyoming Department of Agriculture	$341,159.26	Wyoming Grape Growers Conferences	The University of Wyoming Extension will offer in-person grape growing conferences to increase the knowledge and skills of beginning and existing producers on grape cultivation practices, techniques, and abilities to successfully produce grapes in Wyoming. These conferences would be a multiday event and offered for three consecutive years at three locations in the State. When feasible, these conferences will be offered at the Sheridan and Powell Research Station vineyards for demonstrations (vineyard establishment, field tours, variety differences, etc.) and hands-on activities (pruning, canopy management, harvesting, and grape processing). These conferences will also allow producers the opportunity to network with others within the state. The Wyoming Grape Production Guides will be distributed during these workshops and will provide a great resource and reference for participants during and after the workshops.	$46,760.00
Wyoming Department of Agriculture	$341,159.26	Wyoming Specialty Crop Local Foods Conference	The Wyoming Department of Agriculture will develop a Wyoming Specialty Crop Local Foods Conference that will be open to individuals interested in specialty crop research, production, promotion and consumption. The conference will include results of past and present Wyoming Specialty Crop projects to help producers, processors, educators and gardeners to increase their overall knowledge of the specialty crop industry. The WDA will hire a contractor to help plan, implement and analyze the success of the project.	$31,616.00