Specialty Crop Competitive Grant
Federal Fiscal Year 2014
Abstracts

Project Title "Enhancing Market Opportunities for Virginia's Specialty Crops and Small to Mid-size Farms through a 10 Percent Marketing and Education Campaign"
Virginia Food System Council
Richmond, VA

Local and regional food commerce continues to emerge and grow in communities and localities across Virginia. However, there are still critical needs for enhancing market opportunities for Virginia's specialty crops and for the small to mid-size farms growing them, particularly since Virginia specialty crops are underutilized by regional businesses, with farmers capturing only a tiny fraction of the $20 billion dollars that Virginians spend annually on food. Additionally, increased fruit and vegetable consumption can result in positive health outcomes and better quality of life. Specific objectives and outcomes of the grant project include: 1) Expand Virginia's $10 a Week Challenge to include a broader 10% Campaign to encourage organizations, institutions, and businesses to pledge 10 percent of their annual food budget to buy Virginia specialty crops in support of local farmers, local food startups/distributors/entrepreneurs, and communities; 2) Enhance the sales to and consumption of specialty fruits and vegetables by these Virginia households, businesses, and institutions; 3) Provide educational resources and community support to help consumers and institutions connect and build relationships with local producers of Virginia's specialty crops; 4) Assist and collaborate with consumers, businesses, and institutions to efficiently communicate their commitment to Virginia's specialty crops, farms and food businesses.

Increasing Capacity to Provide Comprehensive Fresh Produce Food Safety Education from Farm to Fork
Virginia Polytechnic Institute and State University
Blacksburg, VA

Fresh produce contamination in Virginia is a significant concern regardless of the produce grown, production system used, size of farm, or market outlet. Providing comprehensive food safety education from farm to fork is crucial to decrease the risk of outbreaks. To accomplish this primary objective, we propose to increase capacity within Virginia Cooperative Extension to meet fresh produce food safety education and/or training needs for agents, growers, and consumers. We will conduct agent training for assisting growers in implementing Good Agricultural Practices (GAP) across the state. We will create multiple training resources about on-farm food safety practices for agents and growers. Additionally, we will conduct a consumer survey to guide resource development to educate consumers on fresh produce food safety. We will conduct introductory and advanced level grower trainings statewide to increase the number of growers implementing on-farm food safety principles and/or obtaining GAP certification. We will evaluate the project activities using pre- and post-training surveys (agent training); number of website hits, DVD/video views, resource downloads/ distribution of new educational resources using Google analytics or other tracking tool (resource development, consumer outreach); and pre- and post-training questionnaires and Virginia farms posted on USDA AMS website (grower trainings).

Cover Crops and Nutrient Cycling for Vegetable Production in Virginia.
Virginia Polytechnic Institute and State University
Painter, VA

High-residue cover crops (killed late in growth to provide optimal biomass) are the best way to add organic matter to soil for tilth improvement. Higher soil organic matter concentrations raise soil cation exchange capacities, increase water holding potential, reduce erosion, and assist with nutrient cycling; however, may impact nitrogen management. Objectives for this study include: 1. Determine appropriate nitrogen fertilizer application rates for sweet corn and tomatoes in systems that are utilizing high residue cover crops; 2. Quantify soil health improvement from conversion of conventional tilled vegetable land to land with incorporation of cover crops (tomato and sweet corn) and conservation tillage (sweet corn), 3. Determine nitrogen supply from cover crops, and 4. Disseminate information to farming audiences. For both tomato and sweet corn, we will compare their perspective nitrogen fertilizer needs for each system utilizing no cover crops (control), hairy vetch, cereal rye, and mustard. For sweet corn, an additional comparison will be utilized that compares no-tilled systems to conventional systems to monitor nitrogen use over conversion years. We aim to demonstrate that introduction of high residue cover crops on a large scale bases is both possible and beneficial for vegetable production in Virginia for both conventional and organic growers.

Cider Production from Virginia-grown Apples: Development of Research-Based Fermentation Strategies
Virginia Tech
Blacksburg, VA
With the increasing number of cider producers in Virginia and throughout the US, there is an immediate need for research and extension programs that will allow Virginia's cidermakers to be at the forefront of this burgeoning industry. Sulfur off-odors are a persistent problem in cider production, often associated with failure to optimize yeast assimilable nitrogen (YAN) pre-fermentation. Apples are lower in YAN on average, as compared to wine grapes, however wine fermentation practices are currently directly applied to cider fermentation. Through this project, we propose to assess the YAN concentrations in Virginia-grown apples, and develop optimized fermentation management strategies for cider production. Bench-scale dose-response experiments will be conducted to optimize YAN concentration. The survey data and fermentation strategies will be communicated to Virginia cidermakers through Extension publications. This project will conclude with an Extension workshop organized by Virginia Tech Research and Extension faculty. Results of this applied research project will be communicated to the Virginia cider industry within the context of cider fermentation best practices. This workshop will be a useful resource for current and prospective cider makers in Virginia. The successful expansion of the cider industry will lead to increased sale of and value for specialty crops in the Commonwealth.

Development of Commercial Shelf-Stable Recipes for Specialty Crops
Virginia Food Works
Charlottesville, VA
Many specialty crop farmers are forced into profit loss either from accidental overplanting or due to crops not meeting grade standards of wholesalers and retailers. Processing produce into shelf-stable products allows farmers to profit off of otherwise unsellable fruits and vegetables. The proposed project is intended to increase value-added production using foods grown in Virginia.

Virginia Food Works (VFW) is a non-profit that encourages and assists farmers to process their own foods by guiding them through paperwork, sanitation guidelines, and proper equipment usage at the Prince Edward County Cannery. While providing this assistance, VFW has found that farmers are most intimidated by recipe development and approval. To combat this, VFW established a number of approved recipes for clients to use free of charge. Since taking this step, 81% of farmers and farm aggregates use recipes from our approved portfolio. Many of them have additional crops that they are eager to see recipes for, but lack the resources to develop their own recipes.

VFW aims to develop ten new recipes, including basic staples such as pickles and tomato salsa. After introducing these new additions we expect to see a 75% increase in farmers processing value-added foods from their specialty crops.

Advancing Organic Apple Production in Virginia
Virginia Tech
Winchester, VA
Growing apples organically in Virginia can be very challenging due to the intense insect, disease, and weed pressure in our region. Some of these challenges are unique to organic production, and for that reason, may not have been the main focus of university research and extension programs. However, as the demand for organic products remains high and new tools and techniques become available for organic growers, there is a need to conduct research specifically for organic production. Through the projects outlined in this proposal, we aim to target some of the key barriers that have prevented Virginia growers from adopting organic apple production methods. Our project will lead to the development of reliable crop load and disease management practices, and the identification of rootstocks that are productive and disease resistant in organic systems. Additionally, we are proposing a one-day workshop to teach growers about organic apple production techniques, with the goal of increasing the number of organic growers and the acreage of organic apples in the Commonwealth.

Beneficial Bacterial Endophytes Improve Grape Vine Growth and Cold
Institute for Advanced Learning and Research
Danville, VA
The Virginia wine industry was recently ranked as the 5th largest in the country and continues to expand. However this sector, like other agricultural producers, is in need of sustainable solutions to increase yield while reducing the use of synthetic fertilizers. Beneficial bacterial endophytes, residing inside plants, have been proven to promote growth in many economically important food crops such as rice and corn. In French studies, *Burkholderia phytofimans* strain PsJN, an endophyte studied for more than 25 years, was shown scientifically to increase biomass of grapevine 2.2 – 6 fold, enhance cold tolerance by modifying carbohydrate metabolism, and inhibit the development of *Botrytis cinerea*, a gray mold which commonly affects grapevine. We propose to establish PsJN populations in grapevine plantlets in the lab and greenhouse with two commercial cultivars and test plant performance vs non-inoculated plantlets on five vineyards in Southern Virginia. On each site, the growers will plant 100 saplings, half inoculated and half as a control. We will characterize growth, development, and cold tolerance during the first two seasons of growth. The results will be disseminated through IALR educational outreach,

extension, at conferences and on IALRs website, in addition to the development and distribution of a pamphlet.

Making Food Safety Certification Available and Affordable for Virginia Farmers
Appalachian Sustainable Development
Abingdon, VA

Most wholesale produce buyers insist that the farmers who supply them hold some form of food safety certification. Good Agricultural Practices (GAP) certification is currently available from several sources (USDA GAP, GLOBAL GAP, Global Food Safety Initiative (GFSI) to name a few). A compromise effort between these many paths, the Harmonized Food Safety Audit, is gaining traction with many produce buyers.

Appalachian Sustainable Development (ASD), along with Virginia Cooperative Extension, has been at the forefront of working with wholesale buyers to accept GAP certification plans that are friendly to smaller-scale farmers. We have also worked with farmers to provide training in food safety principles and actions and assisted them with obtaining their GAP certifications so that they can have continued access to quality wholesale markets.

ASD, through this grant, will continue to spearhead these efforts throughout the State, providing:

1) Training and consultation to farmers to prepare them to be USDA GAP or Harmonized GAP certification-ready.
2) Expand the training to include direct-market farmers who may need the certification to sell to restaurants and/or institutions.

Development of Soybean Varieties for Sprouts as a Profitable Vegetable Crop
Virginia Polytechnic Institute and State University
Blacksburg, VA

Soybean sprouts, a traditional year-round vegetable in Asia, are gaining popularity in the U.S. due to their high digestible energy, bioavailable vitamins, minerals, amino acids, and phytochemicals. To fulfill the purposes of exportation and domestic consumption, superior soybean seeds are required to secure profit of both growers and sprout manufacturers through high production yield and high quality of seeds and sprouts. Seed producers have been supplying natto (Japanese soyfood) soybeans that share some seed characteristics with sprout beans, to sprout manufacturers. However, natto seeds barely meet the requirement of sprouts because they are not specifically bred for sprouting. Moreover, breeding effort of sprouting soybeans is very limited in the U.S. because most soybean breeders focus on commodity soybean variety development. The objectives of this proposed project are 1) to establish breeding criteria of sprout characters of soybean seeds, and 2) to release sprouting soybean cultivars adapted to Virginia. The breeding criteria will provide invaluable references to breeders on efficient development of sprout varieties. Sprouting soybean cultivars will profit Virginia soybean growers with high premium, increase Virginia soybean seed dealers' market share on specialty crops, ensure sprout manufacturers to produce super quality sprouts, and enhance vegetable consumption in food deserts.

Virginia Wineries Association: Commonwealth Quality Alliance Education
VA Wineries Association
Richmond, VA

With Specialty Crop Funding through VDACS, the Virginia Wineries Association established the Commonwealth Quality Alliance (CQA) in 2011 and has now completed its first two years of awarding CQA certifications. In order to reach timely and sustainable scale of the CQA program, it is necessary to educate wine consumers, producers and sellers about the benefits of the program. Virginia Wineries Association will use 2014 Specialty Crop Funding to ensure long-term sustainability of the program through three objectives:

1. Educate consumers to equate the CQA Seal with quality, well priced Virginia wines.
2. Educate wine producers about CQA participation and the benefits of submitting wines for CQA approval.
3. Educate wine sellers, particularly restaurants, retailers and wholesalers, on the CQA brand and its certification of quality Virginia wines at appropriate price points.

Each of these objectives is intended to expand Virginia wine sales regionally, nationally and internationally by educating consumers on the quality of Virginia wines, expanding the amount of Virginia wine sold through restaurants and retailers and increasing winery participation in the CQA program.

Chestnut Production and Marketing Feasibility Study
Virginia Foundation for Agriculture, Innovation and Rural Sustainability (VA FAIRS)
Richmond, VA

The United States is one of the few nations in the world that can grow chestnuts and does not have a significant commercial chestnut industry. Because the United States has such a small (less than 1 percent of world production) chestnut industry, chestnuts are imported to the United States exceeding $12 million annually.

Development of new chestnuts cultivars, advances in propagation, and cultural techniques now allow for expansion of the commercial chestnut industry in the United States. Chestnuts may make a viable alternative crop for small farmers in Virginia who are looking to diversify their operations.

This project can overcome the limited availability of chestnuts in Virginia by 1) improving understanding of the market demand, 2) exploring the economics of producing chestnuts, and 3) assembling valuable technical information relating to producing this specialty crop. The proposed feasibility study will assemble valuable information relating to producing and marketing this specialty crop. Virginia is one of the few states in Northern America that has the necessary climatic conditions to successfully grow chestnuts. A feasibility study will allow for understanding of the potential market for chestnuts and give small farmers the opportunity to enter a potentially profitable market with this specialty crop.

Low Cost Protection from Pesticide Damage for Honey Bee Colonies
VDACS
Richmond, VA

Honey bees are a vital part of Virginia's agriculture and the environment. Many crops require insect pollination to maximize production and improve quality. The resulting harvest increases farm revenues. The honey bee is an ideal pollinator with each beehive containing thousands of individuals working together to gather nectar and pollinate plants. These hives are easily moved to the site of crops in bloom. As generalist pollinators the benefits of honey bee pollination is not restricted to agricultural production. Pollination in forests, meadows, and wetlands near hive locations supplements food supplies. However, exposure to pesticides for the reduction of insect

pests on farmlands, forests, and homes present a growing threat to honey bees and other pollinators.

Annual losses of managed hives in the United States are 33% in the winter months and possibly as much as an additional 20% in the summer months. The excessive losses are attributed to the cumulative impact of diseases and pests. Exposure to pesticide, specifically insecticides, increase risk to foraging honey bees. Pesticides exposure reduces honey bee populations and subject hives to sub-lethal effects on behavior such as brood development and foraging resulting in poor nutrition. Pesticides and lack of sufficient nutrition directly impacts the insect immune system making them more susceptible to diseases and pests.

The project goal is the development of a low cost method for reducing honey bee exposure to pesticides. Two methods for reducing honey bee exposure to pesticides will be evaluated. Methodology and cost for the best method will be distributed to beekeepers.

Developing Organic and Integrated Management Strategies for Pest Control in Annual Strawberry Production
Virginia Tech
Hampton Roads, VA

Virginia is one of the top 14 strawberry-producing states in the U.S. and additional growers are interested in producing this high-value crop for diversification. Virginia Beach is the largest strawberry-producing area in Virginia, with an annual production value at $750,000 to $1,000,000. Two of the most important production challenges in Virginia include management of diseases and weeds. Conventional growers in Virginia typically pre-plant fumigate their strawberry fields with methyl bromide: chloropicrin (MBPic) for control of devastating diseases such as *Verticillium dahliae* and *Phytopthora* spp. as well as for weed control. Methyl bromide use is being phased out as it depletes the ozone layer. Although there are alternative fumigants available, they do not provide the complete spectrum of pest control as MBPic. Increased regulations on fumigant use means leaving more buffer areas, especially for those fields near sensitive sites such as residential homes, schools and hospitals. Organic producers have few options for pest control, and therefore research on organic methods of pest management is a high priority. The objective of this study is to evaluate solarization, soil solarization enhanced with mustard seed meal and acetic acid, and microwave treatments as alternatives to use of toxic fumigants. This research will benefit both conventional as well as organic growers.

Genetically Improved Fraser Fir Seed Orchard
Mount Roger Area Christmas Tree Growers Association
Whitetop, VA

The Mount Rogers Area Christmas Tree Growers Association (MRACTGA) has been working since 2010 to establish a genetically superior Fraser fir Seed Orchard at the Old Flat on Mount Rogers to replace the declining Grayson Highlands Orchard (1980).

An initial grant from the Virginia Department of Agriculture and Consumer Services (VDACS) was used for the survey and initial preparation of a site on Mount Rogers controlled by the Virginia Department of Forestry, orchard design implementation, and root stock establishment. A 2011 grant from a USDA Specialty Crop Competitive Grant funded the selection and grafting

of 25 genetically superior Mount Rogers Fraser firs into the Old Flat Orchard, wildlife fencing, a native groundcover, fertility improvements, and efforts to add a red spruce wind break around the Old Flat Orchard.

The Old Flat Orchard still needs the selection and grafting of another 25 "super trees," planting of a red spruce border, and improvements to access roads. This grant application asks to continue MRACTGA's work in establishing the Old Flat seed orchard. This grant will help support the only work now underway in Virginia to help preserve the unique Fraser fir/red spruce ecosystem that once flourished in the Southern Virginia Highlands.

Local Food Hub Multi-tiered Quality Assurance and Cost-share Program to Advance GAP Implementation on Small Farms
Local Food Hub, Inc.
Local Food Hub will launch a coordinated, multi-tiered quality assurance and cost-share pilot program, in synch with GAP, to address the diverse needs and capacities of its network of over 75 small farms. Local Food Hub's collaboration with Virginia Cooperative Extension on food safety trainings and resources has been very effective. However, two things are becoming increasingly evident: 1) pressure from the marketplace for food safety assurances is increasing even outside of what regulations demand, and 2) the majority of small farms entering the wholesale marketplace through aggregators like Local Food Hub do not currently have the capacity – and especially the financial resources -- to achieve full GAP certification.

This initiative will include an internal management system that will provide expanded food safety assurances to buyers in the institutional marketplace, and help growers move more quickly and cost-effectively toward full GAP certification. Under this system, each partnering farm will fall within one of three designated tiers: 1) GAP Certified, 2) Transitioning to GAP, or 3) Adhering to Local Food Hub's Quality Assurance Program. Local Food Hub will provide cost-share opportunities for growers who have been through VCE GAP training to offset audit expenses.

Transitioning Farms to Sustainable Practices for Economic Viability and Environmental Health
Arcadia Food, Inc.
Arcadia Food, Inc. seeks to demonstrate the path to long-term economic viability for specialty crop farmers by helping them adopt environmentally sound farming practices and market their produce to consumers in the Washington, D.C, and Fredericksburg region.

The Arcadia Center for Sustainable Food & Agriculture will offer technical assistance, training, consultation, and a wholesale purchase contract to five (5) conventional farmers who designate a portion of their acreage to growing specialty crops using sustainable methods. Arcadia will guarantee a market for the specialty crops produced by contracting to purchase the crops at competitive wholesale prices. Arcadia will partner with The Farmers Market.co to provide technical assistance and market the crops as "Sustainably Virginia Grown," a new brand that will build on VDACS' established program. This will help farmers increase their market share and profits for specialty crops.

The program will provide technical assistance and demonstrate the process for transitioning from conventional to sustainable growing methods; ease the logistics of transporting crops to customers in DC and Fredericksburg; track the financials; evaluate the success of the program; and produce a handbook for farms to replicate the program across the state.

Projects Not Recommended

Vintage Piedmont's Valley View Vineyards: Growing the Defining Virginia Grape
Vintage Piedmont
$50,000
This project seeks to establish a vineyard at an ideal site location in Fauquier County, Virginia, to grow premium Virginia grapes. Currently there is a significant shortage of Virginia-grown grapes to meet the growing demand of farm wineries within the state. Not only will the new vineyard help to meet this growing demand, it will greatly enhance the exposure of Virginia wines both nationally and internationally. The project will provide grapes to five different Virginia farm wineries. The grapes will be grown at Valley View Farm, a 500+ acre farm in Delaplane, Virginia, and, situated at an elevation of 900 to 1,000 feet, the site is a perfect location to grow vitis vinifera grapes, which have been identified to produce premium quality Virginia wines. The wineries involved are intending to plant varietals that have been identified as being able to flourish in the temperate Virginia climate, such as cabernet franc, petit verdot, tannat and viognier. In so doing, this vineyard hopes to finally produce grapes for those wines that are characteristically Virginian in style, thus enhancing the image and reputation of Virginia wines.

VA Wine Industry Salary & Benefits Survey
VA Wineries Association
$29,950
In order to attract and retain a qualified workforce and remain competitive regionally, nationally and internationally, Virginia wineries require comprehensive data on industry jobs, salaries and benefits. Unfortunately, there has never been a compensation study conducted for the Virginia wine industry. From 2005 to 2012, the number of full-time equivalent jobs in the Virginia wine industry rose from 3,162 to 4,753, a 50% increase. During the same time, total wages rose from $84 million to $156 million, an 86% increase. Understanding the salary and benefits structure of the industry will contribute to best practices in Virginia's wine industry which has an annual economic impact of over $750 million. As the non-profit trade association serving Virginia Farm Wineries since 1983, the Virginia Wineries Association can provide a leadership role in conducting a salary and benefits survey for Virginia. With Virginia Specialty Crop funding, the Virginia Wineries Association will contract with an independent third party, which can provide the secure data collection capabilities required to design and conduct a Virginia Wine Industry Salary and Benefits Survey. The survey will generate job descriptions and data on approximately 15 to 20 typical jobs found in Virginia Farm Wineries.

Promoting Health and Specialty Crop Consumption via Community Supported Agriculture
VA Tech
$49,846
Eating fruits and vegetables rich in phytonutrients has been associated with reduced risk of many chronic diseases including obesity, heart disease, stroke, and cancer. Community Supported Agriculture (CSA) is a rapidly expanding model of agricultural production and marketing that has the potential to both increase consumption of fruits and vegetables and enhance the competitiveness of specialty crops in Virginia. Anecdotal evidence indicates that CSAs increase

fruit and vegetable consumption and health outcomes such as weight loss. However, scientific validation and promotion of these results throughout Virginia and especially to underserved communities is necessary. In this project, we propose to research the health benefits of CSA membership and to create outreach materials to promote the work. Specifically, we will investigate CSA members': 1) increases in fruit and vegetable consumption, 2) decreases in weight, and 3) changes in perceived well-being. We will also analyze differences in phytonutrients (vitamin C and antioxidant activity) in CSA versus grocery store produce. Finally, we will video document CSA members experiences and will write research summaries that will be disseminated by our partner organizations, including the Virginia Association for Biological Farming (VABF), the Piedmont Environmental Council, and the Virginia Food System Council.

Agroforestry Opportunities in Virginia: Demonstrating Forest Farming and Edible Landscaping at the Catawba Sustainability Center
VA Tech
$8,705
Virginia's temperate climate suits agroforestry well and can help landowners achieve conservation and revenue goals. Agroforestry is a land management technique that integrates trees, crops, and livestock in an effort to optimize physical, biological, and economic interactions to enhance sustainable agriculture and forestry. Agroforestry practices include riparian buffers, wind breaks, edible landscaping, silvopasture, and forest farming.

This project will augment the existing agroforestry practices at the Virginia Tech Catawba Sustainability Center with the expansion of a forest farming site and the continued development of streamside conservation buffers with native fruit and nut trees and woody floral shrubs. These installations will serve as working demonstrations of these techniques and will be applicable to landowners throughout Virginia and the surrounding region. Forest farmed specialty crops will include wild leeks (Allium tricoccum), ginseng, and goldenseal, and the riparian buffer will include dogwood, service berry, hazelnut, persimmon, and walnut.

Eastern Shore Agricultural Conference & Trade Show
VA Cooperative Extension
$20,036
The Eastern Shore Agricultural Conference and Trade Show (ES Ag Conference) celebrated its twenty-fifth year in 2014. It is a two-day event featuring workshops to help farmers prepare for the upcoming year. The total attendance for 2014 was over four hundred people. The majority of the attendees were from the Eastern Shore of Virginia, but there were producers from Maryland, Delaware and mainland Virginia. Over 80% of the vegetable operations on the Eastern Shore of Virginia are represented at the conference.

The ES Ag Conference had a complete "makeover" in 2014. Great effort was put forth by the planning committee to revitalize the conference by utilizing a new venue, outsourcing of catered lunches, recruiting out- of- state speakers, and new, timely topics covered in the sessions. Relocation of the event to the Eastern Shore Community College's Workforce Development Center provided a comfortable and inviting environment for all attendees, especially because of their advanced A/V technology, which was not available at the previous venue. Local restaurant, the Exmore Diner, catered lunches for the two-day event incorporating local produce and

seafood into the menu. In previous years, funds raised from exhibitors and sponsorships helped fund this event. However, with these changes increased costs were incurred that we hope to help offset with VDACS's Specialty Crops Grant, and continue to keep an event that is free to attendees.
The ES Ag Conference features a general session and five breakout sessions available to agricultural producers and industry members to attend. During the general session, legal and programmatic changes/updates for the upcoming year are provided by agricultural political figures, Virginia Department of Consumer Services representatives, faculty from Virginia Tech and Virginia Cooperative Extension's leaders'. Five concurrent breakout sessions are held featuring commodity specific topics. The breakout sessions in 2014 included soybean, potato, agronomic, vegetable, and small farms. Within those sessions topics covered are marketing, food safety/good agricultural practices, fertility, production, plant pathology, and insect control. The ES Ag Conference is the one time of year where growers, scientists, and marketing specialists can interact on a variety of issues.

This past year, the trade show portion of the ES Ag Conference featured forty-seven agribusinesses. This allows for local agricultural producers to network with agribusiness personnel. Most of our producers find this portion of the ES Ag Conference just as important as the informational sessions because they are able to make contacts for purchasing products they will need in the upcoming year. Great lengths have been made to keep the costs for exhibitors at reasonable levels in order to encourage attendance of the trade show by industry.

The funding that is being requested will provide funds for basic infrastructure, travel for guest speakers, honorariums, vegetable production guides and miscellaneous costs associated with the event. Grant funds will also help us keep the costs to exhibitors and sponsors at reasonable levels.

Sprout 2.0 Specialty Crops
Ag in the Classroom
$12,965
Sprout will educate Virginia children about the wide variety of fruits and vegetables that are grown in the state, including how and where they are grown and their nutritional value as part of a healthy diet. The *Sprout* magazine will cover (but is not limited to): apples, strawberries, peaches, tomatoes, potatoes, green beans.

Sprout activity pages are designed to be highly graphic and to be used directly by children (as opposed to providing lessons that a teacher would deliver). *Sprout* will include puzzles and games intermixed with information about Virginia fruit and vegetables in an eight page format.

The goal of the *Sprout* project is to inform children about these crops to increase their knowledge and their consumption of these foods. Children who eat more fruits and vegetables are less likely to be obese, a state and national health issue.

Bringing the "Blues" to the "New"
Grayson Land Care

$50,000
The Local Food Initiative (LFI), started in 2012 through Grayson LandCare, has explored local food system needs, and identified wholesale and retail marketing opportunities, including "connecting" growers to buyers. A priority has been to scale up local food production to meet the growing demands from consumers and restaurants, based on assessments completed by consumers, institutional food buyers, and food distributors.

During the 2013 growing season, it was apparent that demands for locally grown fruits, especially blueberries, were not being met by area growers. As an example, Independence Farmers Market's first annual "Berry Festival" was extremely popular and included making berry ice cream, pie contests, and selling berry plants to consumers. Unfortunately, they were hard pressed to find enough berry products to sell after the demonstrations and contests, especially blueberries. It is estimated that less than 10 acres of farmland is devoted to blueberry production in our area.

Our LFI has been successful at identifying and supporting opportunities for year-round local food availability; especially wholesale opportunities that are ready and willing to purchase as many blueberries as we can grow. As a result, we want to go "Blue" on the "New" (grow blueberries in the New River Valley) to increase economic opportunities for growers and health benefits for residents.

Quality Measures, Value Added Products, and Health Benefits of Organic Blueberries
Eastern Mennonite University
$48,502
This project furthers our understanding of the nutritional value of blueberries and their efficacy in enhancing health. By comparing six highbush blueberry cultivars raised in certified organic plots, we measure blueberry quality by assessing nine parameters: quantity produced per bush, size, texture, brix, pH, mineral content, antioxidant levels, anthocyanin content, and hedonic taste qualities. To extend the economic value of fresh blueberry sales, we investigate the economics of creating and marketing three value-added blueberry products: vinegar, sauce, and dried berries. Finally using a sensitive living assay system, we assess the potential protective role of blueberry anthocyanins in mitigating teratogenic effects of alcohol on mouse development through a quantitative histological analysis of fetuses from three groups of pregnant mice: control, binge alcohol exposed, and binge alcohol plus supplemented anthocyanin nutrition. Data from these diverse but related projects, carried out by collaborative faculty student research teams from Eastern Mennonite University, will further inform producers and consumers, regarding the nutritional quality of berry cultivars and their role in promoting health, through publications and the sponsorship of a thematic regional berry conference: "Creating and Marketing Nutrient-Rich Berries: Strategies for Organic & Sustainable Growers of Blueberries & Brambleberries."

Improving the competiveness of specialty crops, by increasing SNAP transactions at farmers markets in the Richmond region
FeedRVA
$50,000

The goal of this project is to promote the competitiveness of Specialty Crops at Farmers Markets in the Richmond region.

By targeting underserved communities that are in close proximity to Farmers Markets that accept Supplemental Nutrition Assistance Program (SNAP), we will increase the amount of specialty crops sold at local farmers markets to low-income populations. Additionally this project will improve these communities' access to healthy, affordable, and local food. By increasing the amount of SNAP transactions at three farmers markets in the Richmond region, we will heighten the financial viability of over 35 small-sized specialty crop producers. We will encourage SNAP recipients to shop at the farmers markets by implementing a comprehensive education and outreach program, in partnership with community centers and other stakeholders around the Richmond region.

This proposed two year program will draw upon the lessons from other farmers markets and food access organizations who have had success at implementing similar projects, and use the best practices learned from the research to ensure the success of our program.

Creating, educating and connecting beginning specialty crop farmers in rural SW Virginia
Sustain Floyd
$46,103

Small-scale Appalachian beginning vegetable growers face major challenges: accessing land, labor, capital and markets; insufficient training in regional growing and place-based technical assistance; and inadequate support from community and service networks. In addition, they are often overwhelmed by the significant task of running an agricultural enterprise and developing a business plan for their farm. SustainFloyd's Pocket Farm Program (teaching farmers to thrive in "the pockets" of Appalachia) employs a three-pronged approach addressing these challenges: 1) a 12 week class series on intensive, small-scale, low-labor production with a high tunnel focus; 2) a demonstration production farm testing and informing the curriculum; and 3) a networking and convening platform including a web-based communication tool. The program stems from Virginia Beginning Farmer Rancher Coalition Project with a strong focus on organic practices, production planning, and farm enterprise development. Investment will provide a "train the trainer" initiative in Floyd and Grayson Counties, allow for further innovation on the farm and advance workshop, networking and convening and collaboration efforts for regional specialty crop growers

Improving the Quality and Marketing of Honey & Other Hive Products
ApiSolutions
$17,132

Despite the proliferation of beekeepers in Virginia in recent years, knowledge of how to properly prepare, handle, package and market Virginia honey is lacking. Participation in honey shows is dwindling and there are no efforts in the region to train honey show judges whose product evaluations serve a key role in improving the quality and marketability of honey. To properly package and market a specialty crop so that it is valuable and competitive, the quality of the product is paramount. Through a series of hands on intensive educational workshops, the proposed project seeks to promote the quality and marketability of honey and other value added products of the hive and increase profitability for beekeepers. The project plans to provide

continuing education and networking for beekeepers, improve knowledge of quality standards and skills and abilities to improve honey quality, utilize best practices in production and evaluation, promote good agricultural handling practices, and increase the number of honey show judges and judge's assistants capable of evaluating honey and products of the hive and focusing on quality improvement. We hope to ultimately enhance Virginia honey's competitiveness regionally and nationally. The project aims to be self-sustaining by emphasizing a knowledge transfer/train-the-trainer approach.

Exploring High Value Cut Flowers as a Profitable Crop for Southern Virginia Farmers
Institute for Advanced Learning and Research
$25,486

The establishment of a new high value cut flower production system in southern Virginia can help growers restructure their production system and increase chances of a commercial success. The Institute for Advanced Learning and Research (IALR) has a long history of cut flower research and helping of local growers develop new high value horticulture crops. Regular communication with various growers and producers allows the IALR to respond correctly to farmer needs and work closely with our growers to help in the planning and introduction of high value, high income varieties and new culture systems. This past season, two growers inquired about the possibility of high value cut flower as a future item for which there is a strong demand. This grant will enable the IALR to conduct on-farm trials of high value cut flowers as a marketable crop for our growers. The IALR will organize and provide newly developed lily varieties bulbs and technical support for three farmers, each growing plots of 1000 $feet^2$. If the test results show that selected cut flower varieties can be successfully grown for the wholesale market in our climate, this will open up new income opportunities for southern Virginia farmers and nurseries.

Improving Direct Market Opportunities for Appalachian Farmers
Appalachian Sustainable Development
$33,298

This project will focus on developing stronger direct marketing opportunities for Appalachian farmers by strengthening our efforts to work with regional restaurants. These markets are essential for a strong, regional rural economy because many farmers (due to farm scale and distance from hubs) are unable to benefit directly from wholesale markets or don't have the time or inclination to set up and sell at farmers markets. Direct marketing to restaurants offers better pricing and diversity of product need which broadens opportunities for specialty crop producers.

Our focus will be on Rooted in Appalachia (RiA) – a project which encourages restaurants to add locally grown foods to their menus. Through the combination of an innovative promotional effort and an online ordering system for local foods started in 2013, RiA has attracted participation from 22 restaurants and 14 farmers in Washington County, VA alone. We will expand this opportunity to 30 growers in 2015 and 40 in 2016 through outreach to Lee, Scott, Russell and Smyth Counties.

The Vine to Wine Co-op
VA Wineries Association Cooperative
$50,000

The Virginia Wineries Association Cooperative (VWAC), doing business as The Vine to Wine Co-op, is requesting $50,000 in Specialty Crop Funding to conduct the research, farmer education and initial business transactions required to bring The Vine to Wine Co-op to sustainable operations by September 2016. On behalf of Virginia's over 250 farm wineries and 300 vineyards, The Vine to Wine Co-op will reduce overall grape and wine production costs and enhance the competitiveness of the Virginia Wine Industry by providing two classic cooperative endeavors -- group purchasing and service provision. The Vine to Wine Co-op will help individual farm wineries and vineyards enter collective business practices which will significantly decrease the costs of grape and wine production. 2014 Specialty Crop funding will finance the personnel required to: 1) Research and finalize day-to-day business operations to establish ongoing group purchasing programs and 2) Educate farm winery and vineyard owners and staff about the benefits of cooperative membership and collective purchasing.

Research and Education Programs to Support Development of the Wine Grape Industry in Southwestern Virginia
VA Tech
$24,527
Grape production is expanding in Virginia due to a suitable climate combined with demand for locally-produced wines. Virginia is ranked 5th nationally in viniferous grape production and the industry is growing rapidly. About 1.6 million people visited Virginia's wineries in 2010, up from just more than 1 million in 2009. Viticulture interest has sparked in the New River Valley (NRV). Grower groups as well local government are in the planning stages of a regional viticultural agritourism effort, headed by Giles County. The NRV region has suitable climate, elevation, and soils, making this a unique viticulture region. However, steep slopes are the biggest obstacle. Jeffrey Derr's research into low-growing, low-maintenance cover crops suitable for steep slopes is of particular interest in this grape growing region. This proposal would focus on supporting the regional wine grape agritourism effort through on-farm research, workshops, and field days conducted by Dr. Derr's viticulture extension program and disseminated through the New River Valley Grape Growers Association; with the ultimate goal of increasing wine grape acreage in the New River Valley.

Assessing disease in native and commercial pollinating bees on strawberry farms in Virginia
Old Dominion University
$50,000
Virginia strawberry farmers are experiencing low yield and disease-related honeybee losses. Some farms supplemented with mason bees. This project is a timely bee disease study encompassing several VDACS priorities (organic/conventional specialty crop farms, disease research). We will screen for diseases in commercial and native bees on organic and conventional VA farms. 10 bee species on 18 farm plots (and nearby forest) will be swabbed for disease at beginning and end of strawberry growing season (500 total samples) to determine number/type of disease present, including all known microbial, viral, fungal bee pathogens. Berry flowers will be swabbed to see if pathogens are deposited onto them, facilitating transmission across pollinators. Pathogen DNA will be compared to ~200 known bacterial, viral, fungal species to identify 1) pathogens present, 2) whether they cross bee species over the growing season, 3) whether they differ in number/ abundance on conventional vs. organic VA

strawberry farms. We will identify whether enhancing farms with commercial mason bees entails high risk of novel disease transmission. Public outreach pamphlets on strawberry nutrition will be distributed at Pungo Strawberry Festival (>120,000 visitors). Disease reports will be disseminated to state assessors, beekeepers, famers and published in an entomology journal.

Enhancement of Hippeastrum novel flower traits and cold tolerance for the Virginia horticultural market
Institute for Advanced Learning and Research
$47,726

Hippeastrum, commonly known as amaryllis, is an ornamental perennial bulbous plant. The large flowers, holiday blooming and easy maintenance make it a very popular flower and in great demand worldwide. However, most popular *Hippeastrum* cultivars are bred and imported from the Netherlands, South Africa and Japan, with little breeding and commercial production in America. Every year, American nurseries and horticultural farmers spend thousands of dollars to import bulbs, in order to provide *Hippeastrum* flowers for an expanding holiday market. It is important to develop our own breeding program and enhanced germplasm to provide American-bred cultivars suitable for regional growth conditions. Virginia, especially southern Virginia is not only suitable for Hippeastrum culture in climate, but also contains the infrastructure for commercial production. Our research will focus on creating novel genotypes with various flower colors, flower shapes, and other valuable traits. Another focus is to enhance cold tolerance in order to expand the field growth/cultivation zones, and extend its flower season in Virginia. This grant will accelerate the *Hippeastrum* breeding process, benefit Virginia horticultural growers and impact local economy and job market.

Exploring Market Potential for Native Fruit Growers in Virginia
Appalachian Sustainable Development
$46,458

In an effort to expand natural resource based economic opportunities, ASD promotes the cultivation of native fruit trees, and has assisted landowners, schools and community groups in planting improved varieties. These lesser known fruits deserve recognition for their nutritious, culturally and environmentally important, and delicious qualities. Pawpaw and persimmon specifically, have the potential for a greater market presence, but share traits that make sales difficult. As these plantings mature, the supply of these fruits will outgrow the demand. This project will develop markets for pawpaws and persimmons through a three pronged approach:

1. Use established demonstration sites to raise awareness of these fruits and to encourage additional plantings with the goal of increasing food access for Appalachian communities and expanding marketing opportunities for Appalachian farmers.
2. Explore processing options to extend the shelf life of these fruits and to increase the ability to market them to wholesale and restaurant buyers.
3. Develop promotional materials that share the benefits and uses of these fruits.

ASD expects to see a measured increase in native fruit sales through regional markets over the two year span of this project. A final report will help other regions of the Commonwealth to benefit from our findings.