What is SARE?

Since 1988, the Sustainable Agriculture Research & Education (SARE) program has been the go-to USDA grants and outreach program for farmers, ranchers, researchers and educators who want to develop innovations that improve farm profitability, protect water and land, and revitalize communities. To date, SARE has awarded over $360 million to more than 8,174 initiatives.

SARE is grassroots with far-reaching impact

Four regional councils of expert practitioners set priorities and make grants in every state and island protectorate.

SARE communicates results

SARE shares project results by requiring grantees to conduct outreach and grower engagement; and by maintaining an online library of practical publications, grantee-produced information products and other educational materials.

SARE: Advancing the Frontier of Sustainable Agriculture in...

Florida

Project Highlight: Grafted Specialty Tomatoes More Resilient

Demand for organic heirloom and specialty tomatoes grown in high tunnels is rising, making them high-value crops. Unfortunately, growers of such tomatoes in Florida face challenges in managing soil-borne diseases. Due to Fusarium wilt, one farm faced the complete crop failure of a tomato popular in the local market. University of Florida researcher Xin Zhao partnered with the farm, Frog Song Organics, to see if grafting with resistant rootstocks would control soil-borne diseases in organic high tunnel production systems.

Their experiment compared grafted and non-grafted specialty tomatoes for soil-borne disease resistance, yield and fruit quality. They found that grafting was an effective tool for managing Fusarium wilt and improving the overall health of tomato plants. Yields significantly improved in grafted tomato production compared with non-grafted controls. Even with higher production costs associated with the grafting, the grafted plants resulted in increased net profits.

One hundred professionals and 450 farmers learned of the rewarding research findings at workshops and presentations. Zhao views this on-farm research project as a successful demonstration of technology transfer through a collaborative and productive partnership with local growers to address production issues.

For more information on this project, see sare.org/projects, and search for project number OS13-083.

SARE in Florida

southern.sare.org/sare-in-your-state/florida

$8,215,883 in total funding

180 grant projects (since 1988)

For a complete list of grant projects state by state, go to www.sare.org/state-summaries
SARE Grants in Florida

Total awards: 180 grants
- 37 Research and Education
- 7 Sustainable Community Innovation
- 10 Professional Development Program
- 27 Farmer/Rancher
- 69 Graduate Student
- 30 On Farm Research/Partnership

Total funding: $8,215,883
- $5,867,779 Research and Education
- $87,296 Sustainable Community Innovation
- $651,193 Professional Development Program
- $262,085 Farmer/Rancher
- $874,074 Graduate Student
- $473,456 On Farm Research/Partnership

Find a complete list of projects on page 3.

SARE's Impact

53 percent of producers report using a new production technique after reading a SARE publication.

79 percent of producers said they improved soil quality through their SARE project.

64 percent of producers said their SARE project helped them achieve higher sales.

Learn about local impacts at: southern.sare.org/sare-in-your-state/florida

Contact Your SARE State Coordinator

SARE sustainable ag coordinators run state-level educational programs for Extension and other ag professionals, and many help grant applicants and recipients with planning and outreach. Visit southern.sare.org/state-pages/florida to learn more.

Cassel Gardner
Florida A & M University
(850) 599-3594
cassel.gardner@famu.edu

Marilyn (Mickie) Swisher
University of Florida
(352) 273-3538
mesw@ufl.edu

For detailed information on SARE projects, go to www.SARE.org

SARE is funded by the USDA’s National Institute of Food and Agriculture (NIFA).

This report includes summaries of competitive grant programs only. Some competitive grant programs that are no longer offered may be included or excluded from the totals in this report depending on the grant program and SARE region.
Florida has been awarded $8,215,883 grants to support 178 projects, including but not limited to, 35 research and/or education projects, 10 professional development projects and 27 producer-led projects. Florida has also received additional SARE support through multi-state projects.

### RESEARCH AND EDUCATION GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS22-370</td>
<td>Using rootstocks to increase blueberry farming sustainability in the South East</td>
<td>$371,000</td>
<td>Dr. Gerardo Nunez University of Florida Dr. John Diaz University of Florida Dr. Islam El-Sharkawy Florida A&amp;M University Gabriel Maltais-Landry University of Florida Dr. Zilfina Rubio Ames University of Georgia Ariel Singerman University of Florida</td>
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<tr>
<td>LS21-353</td>
<td>Evaluating the Dual-Purpose of Chickpea: A Cash and Cover Crop for Agricultural Production Systems in the Southeast</td>
<td>$397,648</td>
<td>md ali babar University of Florida Dr. Oscar Liburd University of Florida Gabriel Maltais-Landry University of Florida Dr. Jorge Ruiz-Menjivar University of Florida Dr. Marilyn Swisher University of Florida Chris Wilson University of Florida Alejandro Bolques Florida A&amp;M University</td>
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<tr>
<td>LS21-354</td>
<td>The Use of Cyanobacteria Biofertilizers to Increase Crop Productivity, Improve Soil Health, and Agricultural Sustainability in Florida</td>
<td>$242,000</td>
<td>Dr. Sanku Dattamudi Florida International University Dr. Mahadev Bhat Florida International University Dr. Saoli Chanda Florida International University Dr. Krishnaswamy Jayachandran Florida International University Dr. Leonard Scinto Florida International University</td>
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</tbody>
</table>
**LS21-360** Specialty Pumpkin: Laying the Groundwork for an Emerging Crop and Lucrative Products  $399,999  Dr. Geoffrey Meru  University of Florida  Dr. Carlene Chase  University of Florida  Dr. Andre da Silva  University of Georgia  Dr. Andrew MacIntosh  University of Florida  Dr. Angela Ramirez  University of Puerto Rico  Dr. Jorge Ruiz-Menjivar  University of Florida

**LS20-334** Optimizing Nutrient and Water Management for Organic Mixed Vegetable Production Systems  $299,116  Gabriel Maltais-Landry  University of Florida  Kevin Athearn  University of Florida  Eban Bean  Agricultural and Biological Engineering, UF/IFAS  Dr. Carlene Chase  University of Florida  Tatiana Sanchez  UF/IFAS Extension Alachua County

**LS20-342** Enhancing Hedgerow Systems in Fruit Tree Production to Improve Beneficial Insect Diversity and Abundance  $311,118  Dr. Xavier Martini  University of Florida  Dr. Michael Andreu  University of Florida  Brett Blaauw  University of Georgia  Dr. Lauren Diepenbrock  University of Florida  Rachel Mallinger, Dr.  University of Florida

**LS19-308** Harnessing Microbes for Sustainable Food Production  $44,468  Masanori Fujimoto  University of Florida

**LS19-315** Enhancing Seed Production of Regionally Adapted Crops in the Southeastern Farmer Seed System  $310,537  Dr. Hector Perez  University of Florida

**LS18-291** Managing Plant-parasitic Nematodes and Promoting Beneficial Soil Organisms Through Sod-based Crop Rotation  $198,669  Zane Grabau  University of Florida

**LS18-297** Shade and Ground Cover Growing Systems for Tea Production in Florida  $200,000  Brantlee Richter  University of Florida

**LS18-302** Educational Materials for Cover Crop Adoption and Use in the Subtropics and Tropics  $46,999  Dr. Danielle Treadwell  University of Florida

**LS16-270** Cover Crop Diversity through Evaluation and Increase from Breeder Stocks and Germplasm Repositories  $201,249  Dr. Carlene Chase  University of Florida

**LS11-244** Taking advantage of pest thrips ecology to increase sustainability of vegetable crop production  $235,000  Dr. Stuart Reitz  USDA-ARS  Dr. Stephen Hight  USDA-ARS

**LS10-228** Educating and Training Future Farmers, Researchers and Extension Personnel in Sustainable Agriculture  $245,000  Rosalie Koenig  University of Florida
<table>
<thead>
<tr>
<th>Project Code</th>
<th>Title</th>
<th>Funding</th>
<th>Principal Investigator</th>
<th>Institution</th>
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<tr>
<td>LS10-233</td>
<td>Integrated Use of Grafting Technology to Improve Disease Resistance and Fruit Yield in Specialty Melon Production</td>
<td>$223,000</td>
<td>Dr. Xin Zhao</td>
<td>University of Florida</td>
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<tr>
<td>LS10-235</td>
<td>Preparing Small Scale Limited Resource Vegetable Farmers for Organic Farming in North Florida</td>
<td>$15,000</td>
<td>Dr. Odemari Mbuya</td>
<td>Florida A&amp;M University</td>
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<tr>
<td>LS09-216</td>
<td>Improving the quality of life for Southern organic farmers and farm workers</td>
<td>$190,000</td>
<td>Leah Cohen</td>
<td>Florida Organic Growers</td>
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<td>LS08-205</td>
<td>Selecting a sunn hemp cover crop genotype for weed suppression and seed production</td>
<td>$170,000</td>
<td>Dr. Carlene Chase</td>
<td>University of Florida</td>
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<tr>
<td>LS07-199</td>
<td>Integrating plant essential oils and kaolin for the sustainable management of thrips and tomato spotted wilt on tomato</td>
<td>$185,000</td>
<td>Dr. Stuart Reitz</td>
<td>USDA-ARS</td>
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<tr>
<td>LS06-187</td>
<td>Silicon soil amendments for enhancing disease resistance while improving overall crop health for cucurbits in organic farming systems</td>
<td>$180,000</td>
<td>Dr. Robert McGovern</td>
<td>UF-IFAS</td>
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<tr>
<td>LS06-192</td>
<td>Biorational approaches for management of bacterial wilt and bacterial spot on tomato</td>
<td>$150,000</td>
<td>Dr. Jeffrey Jones</td>
<td>University of Florida</td>
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<tr>
<td>LS05-170</td>
<td>Integrated Management of Purple and Yellow Nutsedge in Organic Vegetable Production</td>
<td>$125,000</td>
<td>Dr. Carlene Chase</td>
<td>University of Florida</td>
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<tr>
<td>LS04-168</td>
<td>Development of Florida Native Plants as Farmscaping Cover Crops and Value-added Crops for Limited-Resource Farmers in Central Florida</td>
<td>$15,000</td>
<td>Robert Kluson</td>
<td>Florida Native Solutions, Inc.</td>
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<tr>
<td>LS03-148</td>
<td>Development of sustainable vegetable production systems for south Florida and Virginia based on use of cover crops and precision irrigation</td>
<td>$179,776</td>
<td>Waldemar Klassen</td>
<td>Tropical Research and Education Center</td>
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<td>LS02-136</td>
<td>Enhancing the Economic and Environmental Competitiveness of Small Farms Through Agroforestry</td>
<td>$189,600</td>
<td>Shibu Jose</td>
<td>University of Florida</td>
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<tr>
<td>LS02-140</td>
<td>A System Approach for Improved Integration of Green Manure in Commercial Vegetable Production Systems</td>
<td>$171,800</td>
<td>Johannes Scholberg</td>
<td>Agronomy Department, University of Florida</td>
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<tr>
<td>LS00-118</td>
<td>Management of Small Rural Holdings as Economic and Ecological Units</td>
<td>$21,406</td>
<td>David Zimet</td>
<td>North Florida Research and Extension Center Inst.</td>
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<tr>
<td>LS99-101</td>
<td>Developing Effective Methods to Assess the Impact of Community Food Security Programs on Purchases of Local Farm Produce in Three Southern Communities</td>
<td>$20,000</td>
<td>Ellen Huntley</td>
<td>Florida Organic Growers</td>
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<tr>
<td>AS95-019</td>
<td>Biological Control Methods for Citrus Rust Mites and Spider Mites on Florida Citrus Utilizing Predaceous Arthropods as Part of IPM</td>
<td>$75,000</td>
<td>Carl C. Childers</td>
<td>IFAS Citrus Research</td>
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<td>Project #</td>
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<tr>
<td>LS92-046</td>
<td>Development of Cropping Systems for Nematode Management on Agronomic and Horticultural Crops</td>
<td>$155,000</td>
<td>D.W. Dickson University of Florida R. McSorley Dept. of Entomology &amp; Nematology, U of Florida Rodrigo Rodriguez-Kabana Auburn University, Plant Pathology</td>
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<tr>
<td>LS91-031</td>
<td>Biological Control and its Economics in the Southern United States</td>
<td>$49,970</td>
<td>J. Howard Frank University of Florida, Entomology and Nematology</td>
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<tr>
<td>LS91-042</td>
<td>Intensive Short Course on Grant Preparation for Future Applicants to the LISA Competitive Grants Program</td>
<td>$39,000</td>
<td>Carl Barfield University of Florida</td>
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<tr>
<td>LS90-021</td>
<td>An Educational Program in Low-input Sustainable Agriculture Production Technology and Philosophy</td>
<td>$18,000</td>
<td>Stephen A. Ford University of Florida</td>
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</table>

**PROFESSIONAL DEVELOPMENT PROGRAM GRANTS**

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<th>Project #</th>
<th>Project Title</th>
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<th>Project Leaders</th>
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<tr>
<td>SPDP21-03</td>
<td>Bridging the Food Supply and Sustainable Agriculture Systems with the Nonprofit Sector</td>
<td>$77,867</td>
<td>Dr. Kimberly Wiley University of Florida Dr. Jennifer Jones University of Florida Dr. Marilyn Swisher University of Florida</td>
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<tr>
<td>ES09-097</td>
<td>Moving nursery producers toward sustainable production practices</td>
<td>$76,237</td>
<td>Gary Knox University of Florida</td>
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<tr>
<td>ES03-067</td>
<td>What Service Providers Must Know About Organic Rules and Regulations</td>
<td>$133,762</td>
<td>Rosalie Koenig University of Florida</td>
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<tr>
<td>ES01-054</td>
<td>Growing with the Community: A Hands-on Training Design for Agricultural Educators, Farmers and Community Leaders</td>
<td>$49,735</td>
<td>Ellen Huntley Florida Organic Growers</td>
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<tr>
<td>ES01-055</td>
<td>Delivery of Biological Control Information and Technology in Florida</td>
<td>$49,919</td>
<td>James Cuda University of Florida</td>
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<tr>
<td>ES01-056</td>
<td>Training in production and utilization of composted waste materials in warm, humid climates to improve soils for horticultural cropping systems</td>
<td>$47,896</td>
<td>Monica Ozores-Hampton University of Florida/SWFREC</td>
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<tr>
<td>ES97-030</td>
<td>Integrated Production of Sustainable Crops for Small Farmers in North Florida</td>
<td>$8,375</td>
<td>Gary Knox University of Florida</td>
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<tr>
<td>ES97-036</td>
<td>Sustainable Agriculture Training Initiative for Texas</td>
<td>$70,136</td>
<td>Nancy Roe</td>
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<td>LST96-012</td>
<td>Facilitating Farmer to Farmer Networks: An Experimental Approach</td>
<td>$80,997</td>
<td>Dr. Marilyn Swisher University of Florida</td>
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<td>LST94-007</td>
<td>Evaluating Sustainability: Gaining Insights</td>
<td>$56,269</td>
<td>Dr. Marilyn Swisher University of Florida</td>
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**FARMER/RANCHER GRANTS**

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<tr>
<td>Project ID</td>
<td>Description</td>
<td>Cost</td>
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<tr>
<td>FS22-339</td>
<td>Methodology to enhance nutrition and economics of microalgae use as live feeds in marine aquaculture</td>
<td>$14,985</td>
<td>Nicole Kirchhoff, PhD</td>
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<td>Live Advantage Bait LLC</td>
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<td>FS20-323</td>
<td>Evaluating Mobile Slaughter Access for Producers and Local Partners</td>
<td>$10,700</td>
<td>Sheila Austin</td>
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<td>Red Boot Goat Farm</td>
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<td>FS19-317</td>
<td>Analysis of the Antioxidant Qualities of Flowers and Fruits of Several Commercial Varieties of Sambucus nigra ssp. Canadensis (The North American Black Elderberry) in Florida</td>
<td>$9,971</td>
<td>Heather Martin</td>
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<td>Hyldemoer &amp; Co., LLC</td>
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<td>FS19-314</td>
<td>Season Extension and Increased Economic Sustainability for South Florida Growers: Using high tunnels to extend tomato production</td>
<td>$9,665</td>
<td>Moses Kashem</td>
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<td>St. Simon's Farm; Urban Vegetable Project Produce Sales LLC</td>
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<td>FS19-319</td>
<td>Sweet Potatoes and Their Vines: A nutritional and sustainable alternative for food and livestock feed</td>
<td>$9,926</td>
<td>April Singleton</td>
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<td>L&amp;B Farm</td>
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<td>FS10-248</td>
<td>Florida Meat Goat Study</td>
<td>$9,996</td>
<td>Rita Pruette</td>
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<td>Granny Smith Farms</td>
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<td>FS06-209</td>
<td>Developing Model CSA Software for Multi-cropping and Harvesting</td>
<td>$9,800</td>
<td>Margaret Pikarsky</td>
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<td>Bee Heaven Farm</td>
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<td>FS03-176</td>
<td>Developing Guidelines for Farmers to Market Directly to Consumers at Community Farmers’ Markets</td>
<td>$14,000</td>
<td>Sharon Yeago</td>
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<td>Alachua County Farmers’ Market, Inc.</td>
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<td>FS02-149</td>
<td>Ultraviolet Light absorbing films and nets for insect and disease control in an organic greenhouse</td>
<td>$8,010</td>
<td>Jim Gibbons</td>
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<td>FS01-129</td>
<td>Development of Multi-Herd Management software for small farmers</td>
<td>$9,949</td>
<td>Dee Blaha</td>
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<tr>
<td>FS01-135</td>
<td>Soil Fertility improvement in Fruit Orchards by Windrowing Urban Plant Debris and Poultry Litter</td>
<td>$8,644</td>
<td>William Graves, IV</td>
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<td>Tetley Groves, Inc.</td>
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<td>FS01-138</td>
<td>Developing a model to increase support for organic farming research at Land Grant Institutions</td>
<td>$14,999</td>
<td>Marty Mesh</td>
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<td>FL Certified Organic Growers and Consumers, (FOG)</td>
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<td>FS01-139</td>
<td>Composted Yard Waste as a Replacement for Pine Bark Mulch in Blueberry Production</td>
<td>$9,800</td>
<td>Richard Nogaj</td>
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<td>Harvest for Humanity</td>
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<td>FS01-140</td>
<td>Using companion plants to increase biological control for thrips in pepper crops</td>
<td>$9,300</td>
<td>Chuck Obern</td>
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<td>FS00-112</td>
<td>Practical Evaluation of Vermicompost on Horticultural Crops</td>
<td>$9,820</td>
<td>Cynthia L. Connolly</td>
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<td>FS00-121</td>
<td>Marketing to the Department of Defense Food Service</td>
<td>$15,000</td>
<td>Glyen Holmes</td>
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<td>New North Florida Coop</td>
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<td>FS00-125</td>
<td>Does Compost Use Affect Post-Harvest Quality of Vegetables?</td>
<td>$9,960</td>
<td>Nancy Roe</td>
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</table>
Alternative Production Methods for Increasing Sustainability of North Florida Strawberry Producers

Developing a Model for Successful Direct Marketing in Southern Communities

Alternative Parasite Control Methods for Goat Producers: A Comparative Analysis

Developing an Organically Approved Soil Mix for Use in Vegetable Transplant Production

Feasibility of Indoor Culture and Production of Ornamental Goldfish

Effect of Limited Environmental Controls on Shiitake Mushroom Production in the Southern Coastal Plain

Development of Potting Soil Mixes from Local Wastes

Testing the Efficacy of Alternative Methods of Whitefly Control in Organic Vegetable Production

Management of Artificial and Restored Wetlands to Improve Water Quality

Biological Control of Flower Thrips in Pepper Fields

GS22-254 Integration of Root-knot Nematode Resistant Pepper Cultivars into an Organic and Sustainable Production System in Florida

GS22-255 Beetle Herding: Development of Strategies to Optimize Biological Control of Air Potato Using Attractants

GS22-256 Sustainable Strategies to Alleviate Heat Stress in Lettuce

GS22-262 How Do Soil Microbes Respond to Chickpea Replacing a Bare Fallow Period in Southeastern Row Crop Agroecosystems?

GS22-267 Improving Blueberry Farming Sustainability Through Better Fertilizer Timing

GS22-268 Identifying the Microbial-mediated Strategies for Optimum Phosphorus Uptake in Bahiagrass and Rhizoma Peanut Mixture

GRADUATE STUDENT GRANTS

<table>
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<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| GS22-254  | Integration of Root-knot Nematode Resistant Pepper Cultivars into an Organic and Sustainable Production System in Florida | $16,232      | Dr.Bala Rathinasabapathi University of Florida
|           |                                                                                |              | Dominick Padilla University of Florida |
| GS22-255  | Beetle Herding: Development of Strategies to Optimize Biological Control of Air Potato Using Attractants | $12,921      | Dr.Xavier Martini University of Florida
|           |                                                                                |              | Jessica Griesheimer University of Florida |
| GS22-256  | Sustainable Strategies to Alleviate Heat Stress in Lettuce                    | $16,392      | Alfred Huo University of Florida
|           |                                                                                |              | Chi Nguyen University of Florida |
| GS22-262  | How Do Soil Microbes Respond to Chickpea Replacing a Bare Fallow Period in Southeastern Row Crop Agroecosystems? | $16,484      | Gabriel Maltais-Landry University of Florida
|           |                                                                                |              | Julia Barra Netto-Ferreira University of Florida |
| GS22-267  | Improving Blueberry Farming Sustainability Through Better Fertilizer Timing   | $15,620      | Dr.Gerardo Nunez University of Florida
|           |                                                                                |              | Lauren Goldsby University of Florida |
| GS22-268  | Identifying the Microbial-mediated Strategies for Optimum Phosphorus Uptake in Bahiagrass and Rhizoma Peanut Mixture | $16,454      | Dr.Hui-Ling Liao University of Florida
|           |                                                                                |              | Adesuwa Erhumwmwunse University of Florida |
Examining Field Crop Farmers’ Climate Change Perceptions, Adaptation Strategies, and Resilience in Florida: A spatial econometric approach

Agricultural Water Resource Management in Puerto Rico and the U.S. Virgin Islands

Sustainable Management Practices for Vanilla Cultivation

Quantifying and Understanding Factors Affecting Tissue Nitrate Accumulation in Organic Celery

Arbuscular Mycorrhizal Fungal Associations in Tea Under Sustainable Production Systems in Florida

What’s the Buzz? Assessing Efficacy, Synergisms, and Sustainability of Pollinators in Southern Highbush Blueberry (Vaccinium corymbosum L.)

Small-scale Farmer Networks in Florida: Understanding and measuring their impacts and exploring the role of extension in their success

Forecasting Pasture Productivity from Satellite Imagery for Use in Adaptive Grazing Management

Translating Grazing: Calculating Nitrogen Credits from Cool-Season Integrated Crop Livestock Systems

Assessing Anaerobic Soil Disinfestation for Improving Weed and Soilborne Disease Management in High-tunnel and Open-field Salad Green Production

Agroecological Intensification of Warm-season Pastures for Improved Productivity and Quality and Ecosystem Services

Intercropping for Pest Control in Organic Kale in Northern Florida

Determining How the Ubiquitous Fungi Mortierella Regulates Belowground N Dynamics Under Different Crop Rotation Systems

Deploying Oak Mulch to Contain and Suppress HLB Disease in Citrus
<table>
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<tr>
<th>Project Code</th>
<th>Project Title</th>
<th>Funding</th>
<th>Principal Investigator(s)</th>
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</table>
| GS20-231    | Evaluating Local Food Hubs as Alternative Food Systems to Preserve Specialty Crop Producers and Build Resilient Communities in North Central Florida | $14,028 | Dr. Jonathan Watson  
 University of Florida  
 BHAGATVEER SANGHA  
 University of Florida |
| GS20-234    | Development of Push-pull System for Ambrosia Beetles, Vectors of Laurel Wilt Disease in Florida Avocado | $11,564 | Dr. Xavier Martini  
 Derrick Conover  
 University of Florida |
| GS19-199    | Sustainable Strategies to Combat the Papaya Ringspot Virus                      | $16,495 | Dr. Alan Chambers  
 Sarah Brewer  
 University of Florida TREC  
 University of Florida |
| GS19-206    | Developing Efficient Probiotics for Microbiota of Diarrhea-Resistant Livestock  | $16,266 | Dr. Kwangcheol Jeong  
 Peixin Fan  
 University of Florida |
| GS19-210    | Toward the Development of a Push-Pull Strategy to Control Whiteflies in Florida Vegetables | $9,308  | Dr. Xavier Martini  
 Nicholas Johnston  
 University of Florida, North Florida Research and Education Center |
| GS19-203    | Evaluation of Cladosporium cladosporioides and Its Extracts for the Management of Pathogenic Bipolaris Species | $14,332 | Dr. Erica Goss  
 Ashish Adhikari  
 University of Florida, Plant Pathology |
| GS18-184    | Evaluation of Biopesticides to Manage Silverleaf Whitefly (Hemiptera: Aleyrodidae) in Tomatoes in Florida | $16,500 | Muhammad Haseeb  
 Jermaine Perier  
 Florida A&M University  
 University of Florida |
| GS18-190    | Innovations in Spotted Wing Drosophila (Drosophila suzukii Matsumura) Monitoring and Attract-and-Kill for Development of More Targeted IPM Programs | $16,334 | Dr. Oscar Liburd  
 Gabrielle LaTora  
 University of Florida |
| GS18-191    | Developing Attract and Reward Strategy to Control Thrips and Whiteflies in Florida Tomato | $10,316 | Dr. Xavier Martini  
 Iris Strzyzewski  
 University of Florida NFREC |
| GS18-195    | Elucidating the Effects of Organic vs. Conventional Cropping Practice and Rhizobia Inoculation on Peanut Yield and Rhizosphere Microbial Diversity | $16,496 | Dr. Jianping Wang  
 Dev Paudel  
 University of Florida |
| GS18-181    | Integrated Weed Management for Long-Term Nutsedge Control and Its Economic Impact in Florida Vegetable Production | $15,361 | Peter Dittmar  
 Ranjeet Randhawa  
 University of Florida |
| GS17-169    | Identifying Marketing Opportunities Under the New Organic Transitional Certification Program | $16,492 | Zhifeng Gao  
 Xuqi Chen  
 University of Florida |
| GS17-170    | Companion Planting of Native Insectary Plants to Benefit Crop Plants: The promotion of beneficial insects in agricultural communities via trophic resource enhancement | $10,332 | Dr. Suzanne Koptur  
 Andrea Salas  
 Florida International University  
 Florida International University |
| GS17-171    | Development of an Integrated Pest and Disease Management Program Utilizing Companion Plants and Inundative Biological Control for Organic Squash Production | $16,245 | Dr. Oscar Liburd  
 Lorena Lopez  
 Virginia Tech |
<table>
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<tr>
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| GS17-172   | Effects of Herbivore-Induced Plant Volatiles in Various Maturity Stages of Pepper on the Attractiveness of Orius insidiosus | $9,787         | Dr. Xavier Martini  
University of Florida  
Edward Traczyk  
University of Florida |
| GS17-173   | Genetic Markers for Resistance to Gastrointestinal Nematode Infections for a Sustainable Florida Native Sheep Production | $16,500        | Raluca Mateescu  
University of Florida  
Zaira Magdalena Estrada Reyes  
University of Florida |
| GS17-178   | Overcoming Microclimate Challenges to Improve Organic Spinach Production in Florida | $16,495        | Dr. Xin Zhao  
University of Florida  
Craig Frey  
University of Florida |
| GS15-141   | Creating successful Farm to School Programs in Florida: A County-wide Feasibility Study of Direct, Local Procurement | $11,000        | Dr. Ray Bucklin  
University of Florida  
Dr. Jonathan Watson  
University of Florida |
| GS15-145   | Sustainable Management Strategies for Management of Key Insect and Nematode Pests in Squash Cropping Systems | $10,121        | Dr. Oscar Liburd  
University of Florida  
Lorena Lopez  
Virginia Tech |
| GS15-146   | Investigating New Management Approaches for Picture-Winged Flies in Sweet Corn | $7,432         | Dr. Gregg Nuessly  
University of Florida/IFAS/EREC  
Dr. David Owens  
University of Delaware |
| GS15-149   | Natural essential oil compounds with heat treatment to control stem-end rot on grapefruit during postharvest handling and marketing | $10,948        | Dr. Mark Ritenour, markritenour  
University of Florida  
Jiaqi Yan  
University of Florida |
| GS15-151   | Legume Proportion of Grass-Legume Mixtures Affects Greenhouse Gas Emissions from Animals Grazing Pasture | $11,000        | Dr. Lynn Sollenberger  
University of Florida  
Dr. Jose Dubeux, Jr.  
University of Florida - NFREC  
Marta Kohmann  
University of Florida |
| GS14-129   | Potential use of seeded peanuts as warm-season legumes in the U.S. southern Coastal Plains | $10,687        | Dr. Jose Dubeux, Jr.  
University of Florida - NFREC  
Edwin Mozley  
University of Florida |
| GS14-134   | Effect of Nematode Suppression Using Cover Crops Resistant to Nematodes on Peanut Production | $10,429        | Dr. Patricio Munoz  
University of Florida  
Lin Xing  
University of Florida |
| GS14-137   | Impacts of land use intensification on soil organic carbon stocks, soil carbon fractions and microbial activities in subtropical grazing land ecosystems | $10,982        | Dr. Maria Silveira  
University of Florida  
Sutie Xu  
University of Florida |
| GS13-119   | Nitrogen dynamics of cover crops with sorghum for increased sustainability | $10,997        | Dr. John Erickson  
University of Florida  
Jeffrey Fedenko  
University of Florida |
| GS12-114   | Developing an integrated pest management program for a newly introduced pest in Florida blueberries: the spotted wing drosophila, Drosophila suzukii | $10,837        | Dr. Oscar Liburd  
University of Florida  
Lindsy Iglesias  
University of Florida |
| GS12-117   | Assessment of long-term management impact on soil C dynamics in subtropical grasslands | $10,879        | Dr. Maria Silveira  
University of Florida  
Julius Adewopo  
University of Florida |
<table>
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<tr>
<td>GS11-100 Efficacy of Entomopathogenic Fungi in Controlling the Small Hive Beetle; a Destructive and Invasive Pest of Honey Bee Colonies</td>
<td>$9,996</td>
<td>Lambert Kanga Florida A&amp;M University Saundra Wheeler Penn State University</td>
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<td>GS11-101 Understanding olfactory cues in host location and dispersal range of the filth fly parasitoid Spalangia cameroni (Hymenoptera:Pteromalidae) to improve the use as sustainable biological control agents for fly control on livestock operations</td>
<td>$9,828</td>
<td>Dr.Norman Leppla University of Florida Dr.Erika Machtinger Pennsylvania State University</td>
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<td>GS11-105 Strategies for Increasing Rhizoma Peanut Contribution to Productivity and Ecosystem Services of Low-Input Pasture Systems</td>
<td>$9,978</td>
<td>Dr.Kim Mullenix Auburn University/Alabama Cooperative Ex Dr.Lynn Sollenberger University of Florida</td>
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<td>GS10-092 Do Human-modified Landscapes Affect Solitary Bee Diversity, Foraging, and Reproduction in Northern Florida?</td>
<td>$10,000</td>
<td>Dr.Katie Sieving Wildlife Ecology / UF Rosalyn Johnson University of Florida</td>
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<td>GS10-093 Improving nutrient retention with biochar</td>
<td>$9,852</td>
<td>Dr.Danielle Treadwell University of Florida Seth Friedman Univ of Florida</td>
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<td>GS10-096 Integrated Use of Grafting Technology to Improve Disease Resistance, Yield and Fruit Quality in Organic Heirloom Tomato Production</td>
<td>$10,000</td>
<td>Dr.Danielle Treadwell University of Florida Charles Barrett University of Florida</td>
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<tr>
<td>GS10-097 Enhancing nitrogen and water use efficiency in tomato production by using grafting technique</td>
<td>$10,000</td>
<td>Dr.Xin Zhao University of Florida Desire Djidonou Horticultural Science Uvi Florida</td>
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<td>GS09-082 The Smells and Sounds of a Subterranean Sessid: Mating disruption and acoustic detection of grape root borer</td>
<td>$9,434</td>
<td>Dr.Oscar Liburd University of Florida William Sanders University of Florida</td>
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<td>GS09-087 Bioenergy and Biofertilizer for Small-Farm Enterprises</td>
<td>$10,000</td>
<td>Dr.Ann C. Wilkie University of Florida-IFAS Ryan E. Graunke University of Florida-IFAS</td>
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<td>GS08-075 Comprehensive evaluation of windbreaks of fast-growing trees</td>
<td>$9,191</td>
<td>Donald L Rockwood University of Florida Bijay Tamang University of Florida</td>
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<td>GS07-057 Optimizing buckwheat use as a weed suppressive cover crop for sustainable cropping systems in Florida</td>
<td>$10,000</td>
<td>Dr.Carlene Chase University of Florida Pei-wen Huang University of Florida</td>
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<td>GS07-063 Reducing nutrient loss below the root zone of drip-irrigated vegetables using low-pressure, increased irrigation time</td>
<td>$9,966</td>
<td>Bee Ling Poh University of Florida Eric Simonne University of Florida</td>
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<td>GS06-053 Are bluebirds good for farms, and are farms good for bluebirds?</td>
<td>$10,000</td>
<td>Dr.Katie Sieving Wildlife Ecology / UF John Deluca Dept. of Wildlife Ecology and Conservation, UF</td>
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<td>GS05-045 Development of an IPM Program for Control of Flower-Thrips in Blueberries in Southeastern United States</td>
<td>$9,914</td>
<td>Dr.Oscar Liburd University of Florida Hector Arevalo University of Florida</td>
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| GS04-039  | Potential for nitrate-nitrogen leaching in a silvopastoral system compared with open pasture and loblolly pine plantation | $9,998       | Ann Blount  
Susan Bambo  
University of Florida |
| GS02-013  | Developing a System to Produce Organic Plug Transplants for Organic Strawberry Production | $9,500       | Daniel Cantliffe  
University of Florida  
Ashwin Paranjpe  
University of Florida |
| GS02-018  | Analysis of a Biological Control Strategy and its Potential in a Pest Management Program in Florida Cabbage | $10,000      | Dr.Stuart Reitz  
USDA-ARS  
Nathan Herrick  
USDA-ARS-CMAVE |
| GS02-019  | Chemical Ecology of Microtheca ochroloma                                      | $3,057       | Susan Webb  
University of Florida  
Dr.Marilyn Swisher  
University of Florida  
Kristen Bowers  
USDA-ARS-CMAVE |
| GS01-009  | Competition for Nitrogen and Groundwater Nitrate Levels in Temperate Alley Cropping Systems | $10,000      | Shibu Jose  
University of Florida  
Samuel Allen  
University of Florida |
| GS00-001  | Induction of Volatile Emissions from Peanut Plants in Response to Fungal and Insect Damage | $10,000      | James Tumlinson  
Insect Attractants Unit  
Yasmin Cardoza  
Department of Entomology and Nematology |
| GS00-005  | Investigating the potential use of Trichogramma, a hymenopteran egg parasitoid, in the integrated management of lepidopteran pests of cabbage in Puerto Rico | $10,000      | Richard Pluke  
University of Florida  
Richard Pluke  
University of Florida |

### ON FARM RESEARCH/PARTNERSHIP GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
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<th>Project Leaders</th>
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</table>
| OS22-153  | Enhancing Stink Bug Biological Control for Increased Sustainability of Rice Production in Florida | $19,982      | Dr.Julien Beuzelin  
University of Florida, Institute of Food and Agricultural Sciences Everglades Research and Education Center |
| OS21-142  | Bridging the Fall Forage Gap with Stockpiled Limpograss Along the Southern Gulf Coast | $19,981      | Dr.Jose Dubeux, Jr.  
University of Florida - NFREC |
| OS21-146  | Evaluating Sorrel (Hibiscus sabdariffa) Varieties for Production in Florida | $19,708      | Dr.Norma Samuel  
UF/IFAS Extension |
| OS21-147  | Development of a Push-Pull System in Avocado Groves in South Florida       | $19,923      | Dr.Xavier Martini  
University of Florida |
| OS21-148  | Plant Sap Analysis as a Tool to Optimize Fertilizer Application for Sustainable Citrus Production | $20,000      | Lorenzo Rossi, Ph.D.  
University of Florida |
| OS20-132  | Fertilizer Mismanagement Impacts on Pasture Health                          | $19,828      | Cheryl Mackowiak  
University of Florida |
| OS20-135  | On-farm Evaluation of an Innovative Anaerobic Soil Disinfestation Practice for Improving Organic Carrot Production in North Florida | $19,995      | Dr.Xin Zhao  
University of Florida |
| OS20-137  | Combining Non-crop Habitat and Semiochemical Lures to Increase Natural Enemy Recruitment and Retention in Florida Vegetable Crops | $18,164      | Dr.Xavier Martini  
University of Florida |
OS18-113  Trap Assisted Scouting for Asian Cockroach Management in Florida $14,782  Dr. Julien Beuzelin  University of Florida, Institute of Food and Agricultural Sciences Everglades Research and Education Center

OS18-114  Assisting Vegetable Growers in Florida with Soil Health Evaluation Associated with Cover Cropping/Green Manure Practice During Summer $15,000  Jehangir Bhadha  University of Florida, Institute of Food and Agricultural Sciences Everglades Research and Education Center

OS17-104  Evaluating the Effect of Biological Control and Planting Mixed Varieties to Manage Whitefly and Aphid Pests in Organic Squash $14,821  Dr. Oscar Liburd  University of Florida

OS17-106  Developing Sustainable and New Alternative Non-chemical Weed Control Strategies for Container Nursery Growers $15,000  Dr. Stephen Christopher Marble  University of Florida/Institute of Food and Agricultural Sciences

OS17-110  Farmers’ Evaluation of Cover Crop Effects on Sandy Soils in the Suwannee River Basin in North Florida $14,744  Kevin Attearn  University of Florida

OS16-098  Using Flowering Plants on Strawberry Field Edges to Enhance Natural Enemies and Pollinators and Improve Pest Control and Fruit Quality $14,996  Justin Renkema  University of Florida

OS14-086  Use of non-native invasive tree logs for commercial mushroom production on small farms $14,984  Dr. Stephen Hight  USDA-ARS

OS13-075  Large Scale Recycling of Used Potting Media with Solarization $3,161  Shawn Steed  UF/IFAS Extension

OS13-078  Novel approaches to establish rhizome peanut (Arachis glabrata Benth) on bahiagrass (Paspalum notatum Flugge) pasture: from research to on-farm application $14,945  Dr. Jose Dubeux, Jr.  University of Florida - NFREC

OS13-079  Establishing and Evaluating Selected Cover Crops on Small Farms to Increase the Impact of Beneficial Arthropods on Crop Pests $14,984  Robert Hochmuth  University of Florida

OS13-082  Propagation of edible Pecan Truffle (Tuber lyonii) in pecan nurseries $14,978  Dr. Matthew Smith  University of Florida

OS13-083  Grafting heirloom tomatoes for organic high tunnel production to improve season extension, disease control, and fruit yield: A partnership with local growers for technology transfer $14,999  Dr. Xin Zhao  University of Florida

OS12-063  Offseason Management for Organic High Tunnels for Improved Pest Suppression and Soil Health $14,967  Dr. Carlene Chase  University of Florida

OS11-060  Investigating various tactics of intercropping buckwheat with squash to increase natural enemy populations, reduce pest and disease pressure and increase yield $14,978  Dr. Oscar Liburd  University of Florida
OS10-054  Evaluating compost and lime effects on soil organic matter, soil microbial communities and the control of Fusarium wilt in commercial tomato grown in Florida’s sandy soils  $14,955  Amy Shober  University of Florida

OS10-056  Improving Cover Crop Management in Florida Row, Vegetable and Organic Citrus Systems  $14,940  Dr.Danielle Treadwell  University of Florida

OS08-043  Monitoring Nutrient Availability and Leaching Below the Root Zone in Organic Vegetable Production  $14,900  Dr.Danielle Treadwell  University of Florida  Bee Ling Poh  University of Florida  Eric Simonne  University of Florida

OS06-029  Development and implementation of a trap cropping system to suppress stink bugs in the southern Coastal Plain  $15,000  Dr.Russell Mizell, III  NFREC-Quincy, University of Florida

OS05-026  Optimization of Irrigation Practices in Organic and Sustainable Vegetable Production with Soluble Dye as an Educational Tool  $14,663  Eric Simmone  University of Florida

OS04-022  A Low Cost Trapping System for Control of the Small Hive Beetle Aethina Tumida Murray, A Pest of Honey Bee Colonies  $15,000  Peter Teal  USDA-ARS/CMAVE

OS03-015  Performance of Various Forage Combinations Under Thinned Pine Canopies in North Florida  $14,982  Ann Blount

OS03-017  Soil Water Movement in Vegetables Grown with Plasticulture  $14,096  Eric Simmone  Univ. of Florida IFAS

### SUSTAINABLE COMMUNITY INNOVATION GRANTS

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<tr>
<td>CS15-094</td>
<td>Who’s Connected? Sustainable Producers in the North Central Florida Food System</td>
<td>$34,665</td>
<td>Dr.Kathryn Stofer  University of Florida</td>
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<td>CS09-072</td>
<td>Wildwood Growers' Market - Starting a Local Food System</td>
<td>$7,910</td>
<td>Susan Kelly  UF/IFAS Sumter Co. Extension</td>
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<td>CS06-044</td>
<td>Florida Farm Link – Building the Foundation of a Sustainable Community Food System by Connecting Sustainable Agriculture to Economic Development Initiatives</td>
<td>$9,521</td>
<td>Laura Morton  NRCS/Florida West Coast RC&amp;D</td>
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<td>CS04-023</td>
<td>Youth as Community Organizers</td>
<td>$10,000</td>
<td>Ellen Huntley  Florida Organic Growers</td>
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<td>CS04-028</td>
<td>Farming and Conservation Easements: A Win-Win Partnership</td>
<td>$10,000</td>
<td>Mark Hostetler  University of Florida</td>
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<tr>
<td>CS03-010</td>
<td>“Santa Rosa Fresh” Marketing Assistance</td>
<td>$10,000</td>
<td>Paula Davis  Santa Rosa County  Joan Hughes  TEAM Santa Rosa EDC</td>
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<td>CS02-008</td>
<td>Test Marketing of New Label in Southwest Florida for USA Grown/Living Wage Produce</td>
<td>$5,200</td>
<td>Richard Nogaj  Harvest for Humanity</td>
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</table>
Total funding from the USDA SARE program to Florida
$8,215,883

For further information on projects, contact 770-412-4787 or ssare@uga.edu. Sustainable Agriculture Research and Education (SARE) is funded by USDA’s National Institute of Food and Agriculture (NIFA).