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 8,153 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 in Florida

Southern.sare.org/sare-in-your-state/Florida

$8,216,039 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: 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 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: $8,216,039
- $5,867,935 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 $8,216,039 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&lt;br&gt;Dr.John Diaz&lt;br&gt;Dr.Islam El-Sharkawy&lt;br&gt;Gabriel Maltais-Landry&lt;br&gt;Dr.Zilfina Rubio Ames&lt;br&gt;Ariel Singerman&lt;br&gt;University of Florida&lt;br&gt;Florida A&amp;M University&lt;br&gt;University of Georgia&lt;br&gt;University of Florida</td>
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<tr>
<td>LS22-378</td>
<td>Community Apiary - Providing Experiential Education and Access for Novice Beekeepers in an Urban Setting</td>
<td>$49,957</td>
<td>Ju'Coby Pittman&lt;br&gt;Octavious Carr&lt;br&gt;Mallory Schott&lt;br&gt;Clara White Harvest Farms</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&lt;br&gt;Dr.Oscar Liburd&lt;br&gt;Gabriel Maltais-Landry&lt;br&gt;Dr.Jorge Ruiz-Menjivar&lt;br&gt;Dr.Marilyn Swisher&lt;br&gt;Chris Wilson&lt;br&gt;Alejandro Bolques&lt;br&gt;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&lt;br&gt;Dr.Mahadev Bhat&lt;br&gt;Dr.Saoli Chanda&lt;br&gt;Dr.Krishnaswamy Jayachandran&lt;br&gt;Dr.Leonard Scinto&lt;br&gt;Florida International University&lt;br&gt;Florida International University&lt;br&gt;Florida International University&lt;br&gt;Florida International University&lt;br&gt;Florida International University</td>
</tr>
</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

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
LS10-233  Integrated Use of Grafting Technology to Improve Disease Resistance and Fruit Yield in Specialty Melon Production $223,000 Dr. Xin Zhao University of Florida

LS10-235  Preparing Small Scale Limited Resource Vegetable Farmers for Organic Farming in North Florida $15,000 Dr. Odemari Mbuya Florida A&M University

LS09-216  Improving the quality of life for Southern organic farmers and farm workers $190,000 Leah Cohen Florida Organic Growers

LS08-205  Selecting a sunn hemp cover crop genotype for weed suppression and seed production $170,000 Dr. Carlene Chase University of Florida

LS07-199  Integrating plant essential oils and kaolin for the sustainable management of thrips and tomato spotted wilt on tomato $185,000 Dr. Stuart Reitz USDA-ARS

LS06-187  Silicon soil amendments for enhancing disease resistance while improving overall crop health for cucurbits in organic farming systems $180,000 Dr. Robert McGovern UF-IFAS Amanda Gevens University of Florida

LS06-192  Biorational approaches for management of bacterial wilt and bacterial spot on tomato $150,000 Dr. Jeffrey Jones University of Florida

LS05-170  Integrated Management of Purple and Yellow Nutsedge in Organic Vegetable Production $125,000 Dr. Carlene Chase University of Florida

LS04-168  Development of Florida Native Plants as Farmscaping Cover Crops and Value-added Crops for Limited-Resource Farmers in Central Florida $15,000 Robert Kluson Florida Native Solutions, Inc.

LS03-148  Development of sustainable vegetable production systems for south Florida and Virginia based on use of cover crops and precision irrigation $179,776 Waldemar Klassen Tropical Research and Education Center

LS02-136  Enhancing the Economic and Environmental Competitiveness of Small Farms Through Agroforestry $189,600 Shibu Jose University of Florida

LS02-140  A System Approach for Improved Integration of Green Manure in Commercial Vegetable Production Systems $171,800 Johannes Scholberg Agronomy Department, University of Florida

LS00-118  Management of Small Rural Holdings as Economic and Ecological Units $21,406 David Zimet North Florida Research and Extension Center Inst.

LS99-101  Developing Effective Methods to Assess the Impact of Community Food Security Programs on Purchases of Local Farm Produce in Three Southern Communities $20,000 Ellen Huntley Florida Organic Growers


AS95-019  Biological Control Methods for Citrus Rust Mites and Spider Mites on Florida Citrus Utilizing Predaceous Arthropods as Part of IPM $75,000 Carl C. Childers IFAS Citrus Research
### PROFESSIONAL DEVELOPMENT PROGRAM GRANTS

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

### FARMER/RANCHER GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| LS92-046   | Development of Cropping Systems for Nematode Management on Agronomic and Horticultural Crops | $155,000     | D.W. Dickson, University of Florida  
R. McSorley, Dept. of Entomology & Nematology, U of Florida  
Rodrigo Rodriguez-Kabana, Auburn University, Plant Pathology |
<p>| LS91-031   | Biological Control and its Economics in the Southern United States                | $49,970      | J. Howard Frank, University of Florida, Entomology and Nematology |
| LS91-042   | Intensive Short Course on Grant Preparation for Future Applicants to the LISA Competitive Grants Program | $39,000      | Carl Barfield, University of Florida                                           |
| LS90-021   | An Educational Program in Low-input Sustainable Agriculture Production Technology and Philosophy | $18,000      | Stephen A. Ford, University of Florida                                          |</p>
<table>
<thead>
<tr>
<th>Code</th>
<th>Project Title</th>
<th>Funding</th>
<th>PI</th>
<th>Institution</th>
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<tbody>
<tr>
<td>FS22-339</td>
<td>Methodology to enhance nutrition and economics of microalgaes use as live feeds in marine aquaculture</td>
<td>$14,985</td>
<td>Nicole Kirchhoff, PhD</td>
<td>Live Advantage Bait LLC</td>
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<tr>
<td>FS20-323</td>
<td>Evaluating Mobile Slaughter Access for Producers and Local Partners</td>
<td>$10,700</td>
<td>Sheila Austin</td>
<td>Red Boot Goat Farm</td>
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<tr>
<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>
<td>St. Simon's Farm; Urban Vegetable Project Produce Sales LLC</td>
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<tr>
<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>
<td>L&amp;B Farm</td>
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<tr>
<td>FS10-248</td>
<td>Florida Meat Goat Study</td>
<td>$9,996</td>
<td>Rita Pruette</td>
<td>Granny Smith Farms</td>
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<tr>
<td>FS06-209</td>
<td>Developing Model CSA Software for Multi-cropping and Harvesting</td>
<td>$9,800</td>
<td>Margaret Pikarsky</td>
<td>Bee Heaven Farm</td>
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<tr>
<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>
<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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<tr>
<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>
<td>Tetley Groves, Inc.</td>
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<tr>
<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>
<td>FL Certified Organic Growers and Consumers, (FOG)</td>
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<tr>
<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>
<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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<tr>
<td>FS00-121</td>
<td>Marketing to the Department of Defense Food Service</td>
<td>$15,000</td>
<td>Glyen Holmes</td>
<td>New North Florida Coop</td>
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<tr>
<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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</tbody>
</table>
**Alternative Production Methods for Increasing Sustainability of North Florida Strawberry Producers**
- **Project #:** FS00-127
- **SARE Support:** $9,964
- **Project Leaders:** Larry Gillard
- **Affiliation:** South Georgia Farmers Co-op

**Developing a Model for Successful Direct Marketing in Southern Communities**
- **Project #:** FS99-089
- **SARE Support:** $7,020
- **Project Leaders:** Trace Giornelli

**Alternative Parasite Control Methods for Goat Producers: A Comparative Analysis**
- **Project #:** FS99-093
- **SARE Support:** $5,960
- **Project Leaders:** Charles Johnson
- **Affiliation:** C&M Farms

**Developing an Organically Approved Soil Mix for Use in Vegetable Transplant Production**
- **Project #:** FS99-094
- **SARE Support:** $7,660
- **Project Leaders:** Rosalie Koenig
- **Affiliation:** University of Florida

**Feasibility of Indoor Culture and Production of Ornamental Goldfish**
- **Project #:** FS98-067
- **SARE Support:** $2,216
- **Project Leaders:** Robert Draughon

**Effect of Limited Environmental Controls on Shiitake Mushroom Production in the Southern Coastal Plain**
- **Project #:** FS97-057
- **SARE Support:** $9,990
- **Project Leaders:** Charles McRae

**Development of Potting Soil Mixes from Local Wastes**
- **Project #:** FS95-025
- **SARE Support:** $9,600
- **Project Leaders:** Steve Garrison
- **Affiliation:** Almond Tree Nursery

**Testing the Efficacy of Alternative Methods of Whitefly Control in Organic Vegetable Production**
- **Project #:** FS95-026
- **SARE Support:** $5,200
- **Project Leaders:** Rosalie Koenig
- **Affiliation:** University of Florida

**Management of Artificial and Restored Wetlands to Improve Water Quality**
- **Project #:** FS95-030
- **SARE Support:** $10,000
- **Project Leaders:** A. Glenn Simpson
- **Affiliation:** Big Island Grove

**Biological Control of Flower Thrips in Pepper Fields**
- **Project #:** FS94-019
- **SARE Support:** $9,950
- **Project Leaders:** Ted & Trudy Winsberg
- **Affiliation:** Green Cay Farms

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**GRADUATE STUDENT GRANTS**

<table>
<thead>
<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 Erhumwunse  
University of Florida |
<table>
<thead>
<tr>
<th>Project Number</th>
<th>Project Title</th>
<th>Funding</th>
<th>Principal Investigator(s)</th>
<th>Co-Investigator(s)</th>
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<tbody>
<tr>
<td>GS21-235</td>
<td>Examining Field Crop Farmers’ Climate Change Perceptions, Adaptation Strategies, and Resilience in Florida: A spatial econometric approach</td>
<td>$15,775</td>
<td>Dr. Jorge Ruiz-Menjivar</td>
<td>Yong Liu</td>
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<td>University of Florida</td>
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<tr>
<td>GS21-237</td>
<td>Agricultural Water Resource Management in Puerto Rico and the U.S. Virgin Islands</td>
<td>$13,076</td>
<td>Dr. Marilyn Swisher</td>
<td>Megan Donovan, M.S.</td>
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<tr>
<td>GS21-238</td>
<td>Sustainable Management Practices for Vanilla Cultivation</td>
<td>$16,499</td>
<td>Dr. Alan Chambers</td>
<td>Joshua Anderson</td>
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<td>GS21-239</td>
<td>Quantifying and Understanding Factors Affecting Tissue Nitrate Accumulation in Organic Celery</td>
<td>$16,497</td>
<td>Dr. Xin Zhao</td>
<td>Zachary Ray</td>
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<td>GS21-243</td>
<td>Arbuscular Mycorrhizal Fungal Associations in Tea Under Sustainable Production Systems in Florida</td>
<td>$16,444</td>
<td>Dr. Bala Rathinasabapathi</td>
<td>Caitlin Clarke</td>
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<td>GS21-244</td>
<td>What’s the Buzz? Assessing Efficacy, Synergisms, and Sustainability of Pollinators in Southern Highbush Blueberry (Vaccinium corymbosum L.)</td>
<td>$16,493</td>
<td>Rachel Mallinger, Dr.</td>
<td>John Ternest</td>
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<td>University of Florida</td>
<td>University of Florida Department of Entomology and Nematology</td>
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<td>GS21-247</td>
<td>Small-scale Farmer Networks in Florida: Understanding and measuring their impacts and exploring the role of extension in their success</td>
<td>$15,930</td>
<td>Paul Monaghan</td>
<td>Jose Perez</td>
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<td>GS21-249</td>
<td>Forecasting Pasture Productivity from Satellite Imagery for Use in Adaptive Grazing Management</td>
<td>$16,445</td>
<td>Chris Wilson</td>
<td>Hunter Smith</td>
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<td>University of Florida</td>
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<tr>
<td>GS20-219</td>
<td>Translating Grazing: Calculating Nitrogen Credits from Cool-Season Integrated Crop Livestock Systems</td>
<td>$16,493</td>
<td>Dr. Marcelo Wallau</td>
<td>Kacey Aukema</td>
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<td>University of Florida</td>
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<td>GS20-221</td>
<td>Assessing Anaerobic Soil Disinfestation for Improving Weed and Soilborne Disease Management in High-tunnel and Open-field Salad Green Production</td>
<td>$16,499</td>
<td>Dr. Xin Zhao</td>
<td>Isaac Vincent</td>
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<tr>
<td>GS20-222</td>
<td>Agroecological Intensification of Warm-season Pastures for Improved Productivity and Quality and Ecosystem Services</td>
<td>$16,173</td>
<td>Chris Wilson</td>
<td>Hannah Rusch</td>
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<td>University of Florida</td>
<td>University of Florida</td>
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<tr>
<td>GS20-223</td>
<td>Intercropping for Pest Control in Organic Kale in Northern Florida</td>
<td>$16,279</td>
<td>Nora Underwood</td>
<td>Penelope Ales</td>
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<td>Florida State University</td>
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<td>GS20-224</td>
<td>Determining How the Ubiquitous Fungi Mortierella Regulates Belowground N Dynamics Under Different Crop Rotation Systems</td>
<td>$16,144</td>
<td>Dr. Hui-Ling Liao</td>
<td>Kaile Zhang</td>
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<td>University of Florida</td>
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<td>GS20-225</td>
<td>Deploying Oak Mulch to Contain and Suppress HLB Disease in Citrus</td>
<td>$12,347</td>
<td>Lorenzo Rossi, Ph.D.</td>
<td>Lukas Hallman</td>
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| 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  
University of Florida  
Derrick Conover  
University of Florida |
| GS19-199   | Sustainable Strategies to Combat the Papaya Ringspot Virus            | $16,495  | Dr. Alan Chambers  
University of Florida  
Sarah Brewer  
University of Florida |
| GS19-206   | Developing Efficient Probiotics for Microbiota of Diarrhea-Resistant Livestock | $16,266  | Dr. Kwangcheol Jeong  
University of Florida  
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  
University of Florida  
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  
University of Florida  
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  
Center for Biological Control, College of Agriculture and Food Sciences, Florida A&M University  
Jermaine Perier  
Florida A&M University |
| 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  
University of Florida  
Gabrielle LaTora  
University of Georgia |
| GS18-191   | Developing Attract and Reward Strategy to Control Thrips and Whiteflies in Florida Tomato | $10,316  | Dr. Xavier Martini  
University of Florida  
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  
University of Florida  
Dev Paudel  
University of Florida |
| GS18-181   | Integrated Weed Management for Long-Term Nutedge Control and Its Economic Impact in Florida Vegetable Production | $15,361  | Peter Dittmar  
University of Florida  
Ranjeet Randhawa  
University of Florida |
| GS17-169   | Identifying Marketing Opportunities Under the New Organic Transitional Certification Program | $16,492  | Zhifeng Gao  
University of Florida  
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  
Florida International University  
Andrea Salas  
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  
University of Florida  
Lorena Lopez  
Virginia Tech |
<table>
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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 | 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  
Lindsey 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 |
GS11-100  Efficacy of Entomopathogenic Fungi in Controlling the Small Hive Beetle; a Destructive and Invasive Pest of Honey Bee Colonies  $9,996  Lambert Kanga  Florida A&M University  Saundra Wheeler  Penn State University

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  $9,828  Dr. Norman Leppla  University of Florida  Dr. Erika Machtinger  Pennsylvania State University

GS11-105  Strategies for Increasing Rhizoma Peanut Contribution to Productivity and Ecosystem Services of Low-Input Pasture Systems  $9,978  Dr. Kim Mullenix  Auburn University/Alabama Cooperative Extension  Dr. Lynn Sollenberger  University of Florida

GS10-092  Do Human-modified Landscapes Affect Solitary Bee Diversity, Foraging, and Reproduction in Northern Florida?  $10,000  Dr. Katie Sieving  Wildlife Ecology / UF  Rosalyn Johnson  University of Florida

GS10-093  Improving nutrient retention with biochar  $9,852  Dr. Danielle Treadwell  University of Florida  Seth Friedman  Univ of Florida

GS10-096  Integrated Use of Grafting Technology to Improve Disease Resistance, Yield and Fruit Quality in Organic Heirloom Tomato Production  $10,000  Dr. Danielle Treadwell  University of Florida  Charles Barrett  University of Florida

GS10-097  Enhancing nitrogen and water use efficiency in tomato production by using grafting technique  $10,000  Dr. Xin Zhao  University of Florida  Desire Djidonou  Horticultural Science UVI Florida

GS09-082  The Smells and Sounds of a Subterranean Sessid: Mating disruption and acoustic detection of grape root borer  $9,434  Dr. Oscar Liburd  University of Florida  William Sanders  University of Florida

GS09-087  Bioenergy and Biofertilizer for Small-Farm Enterprises  $10,000  Dr. Ann C. Wilkie  University of Florida-IFAS  Ryan E. Graunke  University of Florida-IFAS

GS08-075  Comprehensive evaluation of windbreaks of fast-growing trees  $9,191  Donald L Rockwood  University of Florida  Bijay Tamang  University of Florida

GS07-057  Optimizing buckwheat use as a weed suppressive cover crop for sustainable cropping systems in Florida  $10,000  Dr. Carlene Chase  University of Florida  Pei-wen Huang  University of Florida

GS07-063  Reducing nutrient loss below the root zone of drip-irrigated vegetables using low-pressure, increased irrigation time  $9,966  Bee Ling Poh  University of Florida  Eric Simonne  University of Florida

GS06-053  Are bluebirds good for farms, and are farms good for bluebirds?  $10,000  Dr. Katie Sieving  Wildlife Ecology / UF  John Deluca  Dept. of Wildlife Ecology and Conservation, UF

GS05-045  Development of an IPM Program for Control of Flower-Thrips in Blueberries in Southeastern United States  $9,914  Dr. Oscar Liburd  University of Florida  Hector Arevalo  University of Florida
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>
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<tr>
<th>Project #</th>
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| 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 Disinestation 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 |
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<th>Principal Investigator</th>
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<tr>
<td>OS18-113</td>
<td>Trap Assisted Scouting for Asian Cockroach Management in Florida</td>
<td>$14,782</td>
<td>Dr. Julien Beuzelin</td>
<td>University of Florida, Institute of Food and Agricultural Sciences Everglades Research and Education Center</td>
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<td>OS18-114</td>
<td>Assisting Vegetable Growers in Florida with Soil Health Evaluation Associated with Cover Cropping/Green Manure Practice During Summer</td>
<td>$15,000</td>
<td>Jehangir Bhadha</td>
<td>University of Florida, Institute of Food and Agricultural Sciences Everglades Research and Education Center</td>
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<td>OS17-104</td>
<td>Evaluating the Effect of Biological Control and Planting Mixed Varieties to Manage Whitefly and Aphid Pests in Organic Squash</td>
<td>$14,821</td>
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<td>OS17-106</td>
<td>Developing Sustainable and New Alternative Non-chemical Weed Control Strategies for Container Nursery Growers</td>
<td>$15,000</td>
<td>Dr. Stephen Christopher Marble</td>
<td>University of Florida/Institute of Food and Agricultural Sciences</td>
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<td>OS17-110</td>
<td>Farmers’ Evaluation of Cover Crop Effects on Sandy Soils in the Suwannee River Basin in North Florida</td>
<td>$14,744</td>
<td>Kevin Athearn</td>
<td>University of Florida</td>
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<td>OS16-098</td>
<td>Using Flowering Plants on Strawberry Field Edges to Enhance Natural Enemies and Pollinators and Improve Pest Control and Fruit Quality</td>
<td>$14,996</td>
<td>Justin Renkema</td>
<td>University of Florida</td>
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<td>OS14-086</td>
<td>Use of non-native invasive tree logs for commercial mushroom production on small farms</td>
<td>$14,984</td>
<td>Dr. Stephen Hight</td>
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<td>OS13-075</td>
<td>Large Scale Recycling of Used Potting Media with Solarization</td>
<td>$3,161</td>
<td>Shawn Steed</td>
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<td>OS13-078</td>
<td>Novel approaches to establish rhizome peanut (Arachis glabrata Benth) on bahiagrass (Paspalum notatum Flugge) pasture: from research to on-farm application</td>
<td>$14,945</td>
<td>Dr. Jose Dubeux, Jr.</td>
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<td>OS13-079</td>
<td>Establishing and Evaluating Selected Cover Crops on Small Farms to Increase the Impact of Beneficial Arthropods on Crop Pests</td>
<td>$14,984</td>
<td>Robert Hochmuth</td>
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<td>OS13-082</td>
<td>Propagation of edible Pecan Truffle (Tuber lyonii) in pecan nurseries</td>
<td>$14,978</td>
<td>Dr. Matthew Smith</td>
<td>University of Florida</td>
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<td>OS13-083</td>
<td>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</td>
<td>$14,999</td>
<td>Dr. Xin Zhao</td>
<td>University of Florida</td>
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<td>OS12-063</td>
<td>Offseason Management for Organic High Tunnels for Improved Pest Suppression and Soil Health</td>
<td>$14,967</td>
<td>Dr. Carlene Chase</td>
<td>University of Florida</td>
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<td>OS11-060</td>
<td>Investigating various tactics of intercropping buckwheat with squash to increase natural enemy populations, reduce pest and disease pressure and increase yield</td>
<td>$14,978</td>
<td>Dr. Oscar Liburd</td>
<td>University of Florida</td>
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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 Simmonne  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 Simmonne  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 Simmonne  Univ. of Florida IFAS

SUSTAINABLE COMMUNITY INNOVATION GRANTS

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<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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<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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Total funding from the USDA SARE program to Florida
$8,216,039

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).