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 8,161 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...

Maryland

Project Highlight: Deep-Rooted Cover Crops Reduce Leaching Risk

Despite the advantages of planting cover crops to reduce nitrate leaching to local waters and the Chesapeake Bay, adoption is still low in Maryland. Estimates are that even with subsidies, less than half of the state’s corn and soybean farms are cover cropped. One reason could be that most cover crops used in the subsidy program are planted after fall harvest and terminated before spring planting, which does not give them much time to grow roots that can capture excess nitrogen in the soil and provide farmers an economic benefit.

So, using a SARE grant, University of Maryland researcher Raymond Weil examined strategies for planting cover crops earlier in the season and the effect it had on both nutrient requirements and yields of corn and soybeans. Working with other researchers and farmers in both Maryland and Pennsylvania, he focused on cover crop species not typically used under the subsidy program, including radishes, legumes and mixes.

The team found that early, deep-rooted cover crops did reduce the risk of nitrate leaching into groundwater and improved corn yields by providing nitrogen in the spring. They have shared project results with more than 2,000 farmers and educators, and the use of a radish cover crop in the state program has increased in recent years.

For more information on this project, see sare.org/projects, and search for project number LNE14-338.

SARE in Maryland

northeast.sare.org/sare-in-your-state/maryland

$6,239,206 in total funding

157 grant projects (since 1988)

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

Total awards: 157 grants
- 35 Research and Education
- 6 Sustainable Community Innovation
- 10 Professional Development Program
- 53 Farmer/Rancher
- 31 Graduate Student
- 19 On Farm Research/Partnership
- 3 Research Only

Total funding: $6,239,206
- $3,844,443 Research and Education
- $78,593 Sustainable Community Innovation
- $724,487 Professional Development Program
- $402,468 Farmer/Rancher
- $451,255 Graduate Student
- $291,034 On Farm Research/Partnership
- $446,926 Research Only

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: northeast.sare.org/sare-in-your-state/maryland

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 northeast.sare.org/state-pages/maryland to learn more.

Naveen Kumar Dixit
University of Maryland Eastern Shore
(410) 621-3650
fnaveenkumar@umes.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.
Maryland has been awarded $6,239,206 grants to support 155 projects, including but not limited to, 33 research and/or education projects, 10 professional development projects and 53 producer-led projects. Maryland 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>LNE22-443</td>
<td>Implementation of Improved Intestinal Parasite Management Practices on Maryland Livestock Farms</td>
<td>$165,354</td>
<td>Sarah Potts, University of Maryland</td>
</tr>
<tr>
<td>LNE21-419</td>
<td>Teaching Black Farmers in Baltimore City to Grow Ethnic Crops for Black Communities</td>
<td>$252,248</td>
<td>Denzel Mitchell, Jr., Farm Alliance of Baltimore</td>
</tr>
<tr>
<td>LNE20-397</td>
<td>Implementing Rotational Grazing Practices on Livestock Operations in Maryland</td>
<td>$78,076</td>
<td>Dr. Amanda Grev, University of Maryland</td>
</tr>
<tr>
<td>LNE18-366</td>
<td>Optimization of Starter Nitrogen Fertilizer Application for Corn Planted into a Cereal Rye Cover Crop</td>
<td>$199,790</td>
<td>Dr. Katherine Tully, University of Maryland</td>
</tr>
<tr>
<td>LNE15-341</td>
<td>Quantifying and demonstrating scrubbing H2S from farm-based anaerobic digestion systems</td>
<td>$216,879</td>
<td>Stephanie Lansing, University of Maryland</td>
</tr>
<tr>
<td>LNE14-338</td>
<td>Deep soil nitrogen: A resource for sustainability in the mid-Atlantic using early cover crops</td>
<td>$249,576</td>
<td>Dr. Ray Weil, University of Maryland Dr. Sarah Hirsh, University of Maryland</td>
</tr>
<tr>
<td>LNE11-312</td>
<td>No-till, No-herbicide Planting of Spring Vegetables Using Low Residue Winter Killed Cover Crops</td>
<td>$154,405</td>
<td>Dr. Ray Weil, University of Maryland Natalie Lounsbury, University of New Hampshire</td>
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<tr>
<td>LNE08-274</td>
<td>Cover Crops for Sustainable Pest Management and Soil Quality in Production Nurseries</td>
<td>$175,920</td>
<td>Dr. Paula Shrewsbury, University of Maryland</td>
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<tr>
<td>LNE06-241</td>
<td>An integrated approach to developing a day neutral strawberry production industry</td>
<td>$88,700</td>
<td>Willie Lantz, University of Maryland Extension</td>
</tr>
<tr>
<td>LNE05-224</td>
<td>Increasing economic and environmental sustainability of aquaculture production systems through aquatic plant culture</td>
<td>$159,309</td>
<td>Andrew Lazur, University of Maryland Ctr. for Environmental Sci.</td>
</tr>
<tr>
<td>LNE05-232</td>
<td>High tannin grain sorghum as a possible natural anthelmintic for sheep and goats</td>
<td>$100,000</td>
<td>Niki Whitley, UMES - Maryland Cooperative Extension</td>
</tr>
<tr>
<td>LNE04-201</td>
<td>Optimizing Environmental Benefits From Riparian Buffers in Maryland</td>
<td>$123,977</td>
<td>Galen P. Dively, Department of Entomology</td>
</tr>
<tr>
<td>Project Code</td>
<td>Title</td>
<td>Budget</td>
<td>Principal Investigator(s)</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------------------------------------</td>
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<td>----------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| LNE04-206    | Season Extension and Cultivar Evaluations for Increasing Farmer Profitability Using High Tunnels in the Baltimore/Washington Metropolitan Marketing Area | $94,650 | Mark Davis
                                                                       |                                                      | Future Harvest-CASA                                                                                                                                     |
| LNE04-211    | Mid-Atlantic Sheep & Goat Marketing Project                          | $31,000 | Susan Schoenian
                                                                       |                                                      | Maryland Cooperative Extension                                                                                                                               |
| LNE04-213    | Environmental and Economic Effects of Management-Intensive Grazing on Dairy Farms - Phase II | $16,963 | Dr. Ray Weil
                                                                       |                                                      | University of Maryland                                                                                                                                   |
| LNE04-180    | Optimization of cover crop strategies for pumpkin production in the mid-Atlantic | $99,613 | Caragh Fitzgerald
                                                                       |                                                      | Maryland Cooperative Extension
                                                                       |                                                      | Kathryn Everts
                                                                       |                                                      | University of Delaware, Dept. of Plant and Soil                                                                                                           |
| LNE03-190    | Small Ruminant Integrated Parasite Management (IPM)                  | $49,830 | Susan Schoenian
                                                                       |                                                      | Maryland Cooperative Extension                                                                                                                               |
| LNE03-192    | Multipurpose Brassica cover crops for sustaining Northeast farmers   | $158,570 | Dr. Ray Weil
                                                                       |                                                      | University of Maryland                                                                                                                                   |
| LNE03-193    | Sustainable pasture lamb production                                 | $147,495 | Niki Whitley
                                                                       |                                                      | UMES - Maryland Cooperative Extension                                                                                                                        |
| LNE02-167    | Enhancement, Implementation & Evaluation of Biologically Based Pest Management Tactic for Three Key Pests in Production Nurseries | $138,636 | Dr. Paula Shrewsbury
                                                                       |                                                      | University of Maryland                                                                                                                                   |
| LNE01-145    | Improving Sustainable Enterprise Selection & Marketing Skills through Business Skills Training | $4,230  | Ginger Myers
                                                                       |                                                      | Howard County Economic Development Authority                                                                                                               |
| LNE01-152    | Environmental & Economic Impacts of Management-Intensive Grazing on Dairy Farms | $131,795 | Dr. Ray Weil
                                                                       |                                                      | University of Maryland                                                                                                                                   |
| LNE00-131    | Development and Evaluation of Management Alternatives for Root Knot Nematodes and Volunteer Potatoes | $128,900 | Kathryn Everts
                                                                       |                                                      | University of Delaware, Dept. of Plant and Soil                                                                                                           |
| LNE00-140    | Microdairy: Creating a Profitable Five-Cow Dairy                     | $168,590 | Frank Kipe
                                                                       |                                                      | Old Springhouse Farm                                                                                                                                     |
| LNE97-084    | Design and Implementation of a Searchable Database on Compost Production and Use for Internet Users | $20,000  | Patricia D. Millner
                                                                       |                                                      | USDA-ARS                                                                                                                                                |
| LNE96-069    | Soil Test for Active Organic Matter: A Tool to Help Assess Soil Quality | $100,000 | Dr. Ray Weil
                                                                       |                                                      | University of Maryland                                                                                                                                   |
| LNE95-052    | Fescue Endophyte Research Study                                      | $9,632  | Craig Hartsock
                                                                       |                                                      | Allegany Soil Conservation District                                                                                                                        |
| LNE95-055    | Control of Gastrointestinal Nematodes in Dairy Cattle Under Intensive Rotational Grazing Management | $45,000  | Louis Gasbarre
                                                                       |                                                      | USDA-ARS                                                                                                                                                |
## Research Only Grants

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>LNE95-061</td>
<td>Resource Conservation &amp; Environmental Stewardship in the “Maryland Ag in the Classroom” Curriculum Guide</td>
<td>$70,000</td>
<td>Richard R. Leader</td>
</tr>
<tr>
<td>LNE95-062</td>
<td>Managing Dairy Waste Using Constructed Wetlands &amp; Composting</td>
<td>$110,305</td>
<td>Leslie Cooperband</td>
</tr>
<tr>
<td>LNE91-027</td>
<td>An Integrated Response to Pollination-Related Problems Resulting from Parasitic Honey-Be Mites, the Africanized Honey Bee, and honey-bee pathogens</td>
<td>$100,000</td>
<td>Nicholas Calderone</td>
</tr>
<tr>
<td>LNE89-013</td>
<td>Winter Cover Crops for Corn Production in the Northeast: N Balance and Soil Moisture Status</td>
<td>$105,000</td>
<td>Morris Decker</td>
</tr>
<tr>
<td>LNE88-003</td>
<td>Role of Cereal Grain Cover Crops in Nitrogen Management for the Chesapeake Bay Region</td>
<td>$150,000</td>
<td>Russell Brinfield</td>
</tr>
</tbody>
</table>

## Professional Development Program Grants

<table>
<thead>
<tr>
<th>Project #</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ENE20-160</td>
<td>Farm Stress Management and Resources for Maryland Service Providers</td>
<td>$96,645</td>
<td>Shannon Dill</td>
</tr>
<tr>
<td>ENE20-165</td>
<td>Maryland Extension Training: Solar Photovoltaic Options, Opportunities and Challenges</td>
<td>$72,152</td>
<td>Dr. Drew Schiavone</td>
</tr>
<tr>
<td>ENE18-151</td>
<td>Agricultural Conservation Leasing Guide Education Series</td>
<td>$159,380</td>
<td>Sarah Everhart</td>
</tr>
<tr>
<td>ENE16-144</td>
<td>The Northeast Cover Crops Council: Building the network and online decision support tools</td>
<td>$144,859</td>
<td>Dr. Katherine Tully</td>
</tr>
<tr>
<td>ENE98-038</td>
<td>Organic Grain Production Another Way</td>
<td>$90,100</td>
<td>John Hall</td>
</tr>
<tr>
<td>ENE98-044</td>
<td>Locally Led Farmer Groups for Sustainable Agriculture: The Study Circle Approach</td>
<td>$6,500</td>
<td>Jim Hanson</td>
</tr>
<tr>
<td>ENE98-046</td>
<td>Conducting On-Farm Research: Enabling Farmers to Implement Sustainable Change in Agriculture</td>
<td>$50,000</td>
<td>Kathryne Everts</td>
</tr>
<tr>
<td>ENE97-033</td>
<td>Riparian Buffer Training (Enhancement, Installation, and Management of Riparian Buffer Systems)</td>
<td>$20,500</td>
<td>Robert Tjaden</td>
</tr>
<tr>
<td>Project #</td>
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</tbody>
</table>
| ENE96-022| Video Training on Improving Water Quality Featuring Farmers and Their Practices in the German Branch Watershed | $24,351      | Jim Hanson  
Department of Ag Resource Economics |
| ENE96-024| Training, Networking and Demonstrating Whole Farm Forage Grazing Systems      | $60,000      | Elmer M. Dengler  
USDA -- NRCS |

**FARMER/RANCHER GRANTS**

<table>
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<tr>
<th>Project #</th>
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</thead>
</table>
| FNE22-007| Determining the Effect of Tree Pruning and Nutritional Inputs on a Neglected Chestnut Orchard | $29,975      | Jane Dennison, Ph.D.  
Morris Orchard LLC |
| FNE22-020| Nature’s Colors: Exploring the Production & Profitability of Natural Dyes in Baltimore | $30,000      | Kenya Miles  
Blue Light Junction |
| FNE22-031| Foliar Application of Kaolin Clay to Manage Pest and Diseases in Day Neutral Strawberry | $22,247      | Maria Velikonja  
Carniola Farms INC |
| FNE22-014| Improving Soil Tilth and Productivity with Mycorrhizal and Saprophytic Fungi | $2,236       | Matthew Harhai  
Goat Plum Tree Farm, LLC |
| FNE22-016| Ground Cherries: Improving Harvesting Efficiency and Defining Marketing Measures | $5,557       | Jenni Hoover  
Serenity Grove Farm |
| FNE22-021| For the Love of Legumes: Sustainable Urban Micro-Scale Grains and Dried Beans On a Demonstration Farm in Baltimore City | $29,806      | Denzel Mitchell, Jr.  
Farm Alliance of Baltimore |
| FNE21-991| Growing Dahlias for Cut Flower Production via Autopots and Aquaponics       | $14,518      | Dr.Tom Precht  
Grateful Gardeners |
| FNE20-954| Composting Sheep Manure with Black Soldier Fly Larvae for Fly and Parasite Control | $13,263      | Andrew Keller  
Vista View Farms |
| FNE20-951| Managing Corn Earworm in Hemp Field by Using Sweet Corn as a Trap Crop       | $14,895      | Kelly Edwards  
Wood Duck Landing Farm |
| FNE18-900| Use of Rate-of-Gain and Dry Lot to Maintain Parasite Anthelmintic Susceptibility in Bluefaced Leicester Maryland Lambs | $13,658      | Andrew Keller  
Vista View Farms |
| FNE17-875| Using real-time generated rate-of-gain to determine anthelmintic need in pastured Blue Faced Leicester Maryland lambs | $9,104       | Andrew Keller  
Vista View Farms |
| FNE16-843| Methods for improving quality and conditions of ground cherry production--part II | $5,652       | Lisa Garfield  
Calliope Farm |
| FNE15-828| Methods for improving quality and conditions of ground cherry production      | $6,889       | Lisa Garfield  
Calliope Farm |
| FNE15-832| Exploring dryland rice production in the mid-Atlantic                      | $11,405      | Heinz Thomet  
Next Step Produce |
Effectiveness of Aerated Static Pile to Windrow Composting on Small-Scale Farms
Emma Jagoz
Moon Valley Farm
$6,237

Exploring low-tech food dehydration to increase profits on small farms
Tanya Tolchin
Jug Bay Market Garden
$14,915

Water Hyacinth Project
Larry Ward
Ward Farms
$8,687

Big Flip Floats for Commercial Oyster Aquaculture
Christine Power
Great Eastern Shellfish Company
David Chamberlain
Great Eastern Shellfish Company, LLC
$11,384

Economical Climate Control for extended Production in High Tunnel Vertical Growing Systems
Allen Lilly
Ryan's Glade Farm
$7,651

Increasing profitability: Building consumer preference for chevon through education and outreach
Jeanne Dietz-Band
Many Rocks Farm
$10,000

Testing Two Selection Assays’ Efficacy for Varroa-mite-tolerant Bee Production
Adam Finkelstein
VP Queen Bees
$4,347

Propagating day-neutral strawberry plugs for fall planting
Jim Strawser
Brook View Farm
$3,395

Assess and quantify the benefit of alternative and renewable energy for greenhouse operations
John Shepley
Emory Knoll Farms, Inc.
$8,800

Sustainable livestock farming: A promotional video and teaching tool
Robin Way
Rumbleway Farm
$5,770

Using ultrasound scanning and performance testing technology to increase loineye area in lamb
John Hall
Hall Suffolks
$5,785

Enhancing the Maryland Nursery Industry’s Ability to Improve Water Quality and Increase Profit
Leslie Hunter-Cario
Environmental Concern, Inc.
$9,900

Verifying New Sustainable Methods for Small Ruminant Parasite Control
Karen Taylor
$3,300

Farrow to Finish Premium Pastured Pork
Errol Mattox
$1,555

Raising Goats on Pasture Alone or with Grain Supplementation
Kurt Schuster
$2,907

Sustainable Methods for Small Ruminant Parasite Control
Karen Taylor
$1,892

Use of Corn Gluten Meal to Reduce Weeds in Beet Fields
David Barylski
$2,356

Effect of Straw, Leguminous and Non-Leguminous Cover Crops on Productivity and Weed Suppression in Organically Managed Asparagus Beds
Michael Klein
$864
FNE02-426  Production of Strawberries in November and December $9,927  David Lankford
FNE02-427  Indoor Raspberry Production $7,633  Wayne Lockwood
FNE02-447  Determination of Omega-3 Fatty Acid in Pastured Raised Meat Rabbits $5,937  Rubin Way
Rumbleway Farm
FNE01-376  Maximizing Nitrogen & Phosphorus Efficiency in a Managed-Intensive-Grazing Dairy $4,481  Judy Gifford
St. Brigid’s Farm
FNE01-382  Effect of Wood Chip Mulch, Leguminous & Non-Leguminous Cover Crops on Productivity & Weed Suppression in Organically Managed Asparagus Beds $3,583  Michael Klein
FNE00-296  On-site demonstration for replacing broadcast herbicides with cultivation and banded herbicides in corn. $5,426  Roy Crow
FNE00-305  Wine grape production in Harford County: the use of canines as a deterrent to deer damage. $822  Robert Halman
Ole 9 Vineyard
FNE00-311  The use of the predacious Phytoselid mite, Amblyseius cucumeris, and the entomopathogenic fungus, Beauveria bassiana, for control of western flower thrips in commercial bedding plant production. $2,874  Gary Magnum
FNE99-257  Dairying in Harford County, Maryland: Transition to Intensive Grazing $6,050  David Keyes
FNE99-263  No-till Transplanted Watermelons in Rye Cover Crop $5,308  Mike Malone
FNE99-265  Mulching with Black Plastic Drainage Pipe $2,390  Lawrence MacDonald
FNE99-267  Amending Soils to Produce Blueberries in Maryland $1,523  Guy & Lynn Moore
FNE99-268  Improving Protein Utilization in Grazing Dairy Cows by Supplementing the Diet with Liquid Molasses $4,175  Ginger Myers
FNE99-269  Evaluating a No-till Transplanter for Organic Vegetable Production $3,072  Drew Norman
FNE99-278  Warm-Season Grass Demonstration for Dairy Farms $2,520  Harry Strite
FNE99-287  Ginseng Dead-Heading: Determining the Effects of Removing Seed-Producing Flowers from Woods-Grown Ginseng $2,363  Steve & Karen Galloway
FNE98-202  Evaluating Raised Beds and Various Mulches for Vegetable Production $3,120  Ed Armacost
<table>
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</thead>
<tbody>
<tr>
<td>FNE97-187</td>
<td>Mixed Field Forage</td>
<td>$2,230</td>
<td>Darryl Walker</td>
</tr>
<tr>
<td>FNE96-148</td>
<td>Improving Aquaculture Productivity &amp; Safety with Dockside Elevator Systems</td>
<td>$3,869</td>
<td>Richard Pelz</td>
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<tr>
<td>FNE95-104</td>
<td>Season Extension Through Annual Organic Strawberry Production &amp; Fall Vegetable Production</td>
<td>$4,705</td>
<td>Eric Rice</td>
</tr>
<tr>
<td>FNE93-012</td>
<td>Bio-Control of Corn Earworm and European Corn Borer in Sweet Corn</td>
<td>$1,510</td>
<td>Nicholas C. Maravell, Nick's Organic Farm</td>
</tr>
<tr>
<td>GNE21-254</td>
<td>Effects of floral diversification on beneficial arthropods and ecosystem services in an edamame agroecosystem</td>
<td>$14,998</td>
<td>Anahi Espindola, University of Maryland, College Park, Kathleen Evans, University of Maryland</td>
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<tr>
<td>GNE21-255</td>
<td>How the Transition to Organic Grain Effects Biological Indicators of Soil Health</td>
<td>$14,970</td>
<td>Dr. Ray Weil, University of Maryland, Biwek Gairhe, University of Maryland</td>
</tr>
<tr>
<td>GNE21-257</td>
<td>Dragonflies as potential biological control on farms: prey assessment using a DNA approach</td>
<td>$15,000</td>
<td>William Lamp, University of Maryland, Margaret Hartman, University of Maryland</td>
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<td>GNE21-268</td>
<td>Management options for farmers facing saltwater intrusion along the Chesapeake Bay's Eastern Shore</td>
<td>$14,999</td>
<td>Dr. Katherine Tully, University of Maryland, Alison Schubel, University of Maryland - College Park</td>
</tr>
<tr>
<td>GNE20-230</td>
<td>Optimizing Early-season Pest Control in Corn: Untangling the Contributions of Neonicotinoid Seed Treatments, In-furrow Pyrethroids, and Bt Hybrids</td>
<td>$14,961</td>
<td>Dr. Kelly Hamby, University of Maryland College Park, Maria Cramer, University of Maryland</td>
</tr>
<tr>
<td>GNE20-231</td>
<td>Co-digestion of Algae from Algal Turf Scrubbers in Farm-based Digesters to Increase Profitability and Reduce Nutrients to the Chesapeake Bay Watershed</td>
<td>$14,978</td>
<td>Stephanie Lansing, University of Maryland, Danielle Delp, University of Maryland</td>
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<tr>
<td>GNE20-236</td>
<td>Developing a Perennial Living Mulch System to Manage Insect Pests in Northeastern Cantaloupe Fields</td>
<td>$14,955</td>
<td>Dr. Cerruti R. R. Hooks, University of Maryland, Demian Nunez, University of Maryland</td>
</tr>
<tr>
<td>GNE19-197</td>
<td>Farming in the Face of Climate Change: Planting Alternative Crops in Salt-intruded Fields</td>
<td>$14,995</td>
<td>Dr. Katherine Tully, University of Maryland, Elizabeth de la Reguera, University of Maryland, College Park</td>
</tr>
<tr>
<td>GNE19-206</td>
<td>Novel Application of Existing Beekeeping Equipment to Combat Inter-colony Transmission of the Varroa Honey Bee Parasite</td>
<td>$14,976</td>
<td>Dennis vanEngelsdorp, University Maryland, Kelly Kulhanek, University of Maryland</td>
</tr>
<tr>
<td>GNE19-207</td>
<td>Plant Growth Promoting Rhizobacteria to Benefit Kale Production: Resilience to Drought Stress, Salinity and Microbial Food Safety</td>
<td>$15,000</td>
<td>Dr. Shirley Micallef, University of Maryland, Xingchen Liu, University of Maryland</td>
</tr>
</tbody>
</table>
Healthy Soils, Healthy Farmers: Assessing Farmers' Soil Contact Activities and Soil Contamination on Urban and Rural Farms

Honey Bee Pathophysiology as a Predictive Measure of Overwinter Colony Loss

Effects of Living Mulch and Cover Crop Residues on Natural Enemy Abundance and Efficacy in Sweet Corn

Evaluation of Biochar as an Additive for Biogas Desulfurization in Dairy Manure Digesters

Movement of Spiders from Drainage Ditches to Agricultural Fields to Enhance Conservation Biocontrol

Understanding Spotted Wing Drosophila’s Role as a Vector for Fruit Rot Fungi in Fall Red Raspberries

Getting Legume Cover Crops to Work in Mid-Atlantic Field Crop Rotations

Evaluating the Effect of Potato Leafhopper Feeding on Biological Nitrogen Fixation in Alfalfa

The Maryland Winter Cover Crop Program: assessing performance

Integrating sustainability & food safety: assessing Salmonella serovar fitness in irrigation water & transfer onto crops

Effect of winter cover crops on soil nitrogen dynamics in no-till corn systems

Evaluations of economic benefits and long-term sustainability of neonicotinoid seed treatment use in the mid-Atlantic

Evaluating the effects of green manure and biofertilizers on pak choi yield, minerals, and phytonutrient contents

The effect of cover crops on the abundance and survival of beneficial stink bugs

Cold tolerance of the invasive kudzu bug and its potential impact on soybean production in the Northeast
GNE15-106  On-farm and isotopic evaluation of deep soil nitrogen capture and cycling by cover crop mixtures  $14,945  
Dr.Ray Weil  
University of Maryland  
Dr.Sarah Hirsh  
University of Maryland

GNE14-089  Reduction of environmental risks and improving livestock productivity in Mixed Crop-Livestock Systems with cheap byproducts of berry fruits  $14,983  
Dr.Debabrata Biswas  
University of Maryland  
Serajus Salaheen  
USDA ARS

GNE12-032  Quantification and persistence of ionophore antimicrobials associated with poultry litter  $14,754  
Dr.Joshua M. McGrath  
University of Maryland  
Dr.Amir Sapkota  
University of Maryland  
Saptashati Biswas  
University of Maryland

GNE12-047  Spatial pattern of infestation risk and management of the invasive brown marmorated stink bug in soybeans  $14,956  
Galen Dively  
University of Maryland College Park  
William Lamp  
University of Maryland, College Park  
Dilip Venugopal  
Dept. of Entomology, Univ. of Maryland

GNE11-025  Cover crop selection and manure placement for weed suppression and nitrogen use efficiency in a no-till organic corn system  $14,986  
Dr.Ray Weil  
University of Maryland  
Hanna Poffenbarger  
University of Maryland

GNE11-030  Developing Inoculum to Increase Anaerobic Digestion Efficiency in Winter Months  $14,974  
Stephanie Lansing  
University of Maryland  
Freddy Witarsa  
University of Maryland

ON FARM RESEARCH/PARTNERSHIP GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| ONE21-392 | Giant Miscanthus Production on Maryland Eastern Shore’s Marginal Land: Grassroots Efforts to Restore Profitable Agriculture                                                                                   | $25,801      | Dr.Sarah Hirsh  
University of Maryland                                                                 |
| ONE21-394 | Increasing Efficiency and Decision-Making Capability of Small, Socially Disadvantaged, and Minority Farmers                                                                                               | $29,957      | Dr.Lila Karki, PhD  
University of Maryland Eastern Shore                                                                 |
| ONE21-397 | Increasing Awareness of Well Drinking Water Quality of the Farming Community in Maryland                                                                                                                   | $29,830      | Dr.Andrew Lazur  
University of Maryland Extension                                                                 |
| ONE21-395 | Upcycling Local Waste Streams to Boost Urban Farm Productivity                                                                                                                                             | $26,883      | Paul Sturm  
Ridge to Reefs                                                                 |
| ONE18-313 | Relationship Marketing in the Digital Age: Helping Farmers Grow Their Businesses Through Online Marketing                                                                                               | $14,495      | Juliet Glass  
Maryland Farmers Market Association                                                                 |
| ONE18-315 | Evaluation of Hops Production in Maryland as a Sustainable Agricultural Enterprise                                                                                                                       | $12,214      | Andrew Kness  
University of Maryland Extension                                                                 |
| ONE17-295 | On-farm food safety trainings for community supported agriculture, on-farm markets, and agritourism operations                                                                                         | $14,974      | Paul Goeringer  
Department of Agricultural and Resource Economics, College of Ag and Natural Resources, University of Maryland |
| ONE16-266 | Increasing profitability of tomato production in high tunnels                                                                                                                                             | $14,800      | Willie Lantz  
University of Maryland Extension                                                                 |
<table>
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<tbody>
<tr>
<td>ONE16-269</td>
<td>A Maryland cheesemakers guild: Supporting producers, connecting with consumers</td>
<td>$14,435</td>
<td>Ginger Myers&lt;br&gt;University of Maryland Extension</td>
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<tr>
<td>ONE16-282c</td>
<td>Changing the mindset of Maryland cover crop farmers through delayed spring burn-down</td>
<td>$11,102</td>
<td>Nevin Dawson&lt;br&gt;University of Maryland Extension</td>
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<tr>
<td>ONE15-251</td>
<td>Priming for production: A podcast on soil health</td>
<td>$14,818</td>
<td>Natalie Lounsbury&lt;br&gt;University of New Hampshire&lt;br&gt;Dr. Ray Weil&lt;br&gt;University of Maryland</td>
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<tr>
<td>ONE14-216</td>
<td>Am I making a profit? Using calculators to develop profitable prices for farm-raised meats</td>
<td>$13,452</td>
<td>Ginger Myers&lt;br&gt;University of Maryland Extension</td>
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<tr>
<td>ONE12-163</td>
<td>Sustainable management tools for the redheaded flea beetle in nurseries</td>
<td>$14,999</td>
<td>Brian Kunkel&lt;br&gt;University of Delaware</td>
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<tr>
<td>ONE12-167</td>
<td>Launching a Maryland small farms poultry processing and marketing group</td>
<td>$14,760</td>
<td>Ginger Myers&lt;br&gt;University of Maryland Extension</td>
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<tr>
<td>ONE09-104</td>
<td>Developing a Cost Effective, Energy Efficient Greenhouse Using Solar Heating to Extend the Growing Season</td>
<td>$6,960</td>
<td>Willie Lantz&lt;br&gt;University of Maryland Extension</td>
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<tr>
<td>ONE08-086</td>
<td>Organic Dried Bean Production in Mid-Atlantic</td>
<td>$7,395</td>
<td>Laura Hunsberger&lt;br&gt;University of Maryland Cooperative Extension</td>
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<tr>
<td>ONE06-060</td>
<td>Short cycling as an approach to successful organic strawberry production</td>
<td>$4,654</td>
<td>Willie Lantz&lt;br&gt;University of Maryland Extension</td>
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<tr>
<td>ONE05-045</td>
<td>Promoting Pollinators on Maryland’s Working Landscapes</td>
<td>$9,535</td>
<td>Annette Meredith&lt;br&gt;University of Maryland</td>
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<tr>
<td>ONE03-015</td>
<td>Double-crop forage systems for dairy farms</td>
<td>$9,970</td>
<td>Don Schwartz&lt;br&gt;Maryland Cooperative Extension</td>
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**SUSTAINABLE COMMUNITY INNOVATION GRANTS**

<table>
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</thead>
<tbody>
<tr>
<td>CNE12-096</td>
<td>Baltimore City Urban Agriculture Alliance</td>
<td>$14,530</td>
<td>Maya Kosok&lt;br&gt;Civic Works</td>
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<tr>
<td>CNE11-090</td>
<td>Producer Inventory Management for Fresh Fruit and Vegetable Sales to Retail Outlets</td>
<td>$15,000</td>
<td>Willie Lantz&lt;br&gt;University of Maryland Extension</td>
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<tr>
<td>CNE10-077</td>
<td>Stimulating Maryland Agricultural Entrepreneurship through Curbside Roundtables and Individual Planning</td>
<td>$12,008</td>
<td>Ginger Myers&lt;br&gt;University of Maryland Extension</td>
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<tr>
<td>CNE09-063</td>
<td>Mid-Atlantic Small Black Farmers Food Distribution Project</td>
<td>$21,395</td>
<td>Berran Rogers&lt;br&gt;Maryland Cooperative Extension Program&lt;br&gt;Gladys McMichael&lt;br&gt;Help Ourselves Project, Inc.</td>
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<tr>
<td>CNE08-047</td>
<td>Expanding and strengthening a network of farmers to support a local foodshed</td>
<td>$5,660</td>
<td>Laura Hunsberger&lt;br&gt;University of Maryland Cooperative Extension</td>
</tr>
<tr>
<td>CNE08-056</td>
<td>Leveraging community financing for farm and farmland protection</td>
<td>$10,000</td>
<td>Dr. Lynda Brushett&lt;br&gt;Cooperative Development I&lt;br&gt;Michael Speltz&lt;br&gt;Society for Protection of</td>
</tr>
</tbody>
</table>
Total funding from the USDA SARE program to Maryland

$6,239,206

For further information on projects, contact 802-651-8335 or nesare@uvm.edu. Sustainable Agriculture Research and Education (SARE) is funded by USDA’s National Institute of Food and Agriculture (NIFA).