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 $309 million to more than 7,407 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, granteeproduced information products and other educational materials.

SARE in Utah

Utah

Project Highlight: Better Onions, Fewer Inputs

Onions are a high-value crop, but high fertilizer rates and aggressive use of pesticides to suppress weeds, diseases and insects threaten the sustainability of onion production. In Utah, growers and researchers are working to show how changes in management practices can allow farmers to maintain profitable yields while lowering their use of inputs.

In 2013 a SARE-funded team led by Utah State University’s Diane Alston studied the effect of certain changes on onion yields, in particular fertilization rates and crop rotations. They were following the lead of a small group of onion producers in the state who were finding they could reduce their use of pesticides by lowering their use of fertilizers and still achieve good yields.

The team pursued multiple objectives and developed a body of information that is helping Utah’s producers adopt more sustainable practices. They surveyed nearly 60 farms to better understand production system predictors of pests and yield; conducted field experiments that showed reducing fertilizer rates could reduce pest densities; and created an interactive production modeling tool.

In an assessment of producers conducted near the end of the project, 67 percent said the information they learned would help them diversify their operation, and 80 percent felt it would help them reduce their use of off-farm inputs.

For more information on this project, see sare.org/projects, and search for project number SW13-034.

Western SARE

western.sare.org/sare-in-your-state/utah

$5,358,896 in total funding

73 grant projects (since 1988)

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

Total awards: 73 grants
- 19 Farmer/Rancher
- 7 Graduate Student
- 6 On Farm Research/Partnership
- 8 Professional Development Program
- 32 Research and Education
- 1 Research to Grass Roots

Total funding: $5,358,896
- $115,837 Farmer/Rancher
- $158,111 Graduate Student
- $279,590 On Farm Research/Partnership
- $474,531 Professional Development Program
- $4,269,668 Research and Education
- $61,160 Research to Grass Roots

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: western.sare.org/sare-in-your-state/utah

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 western.sare.org/state-pages/utah to learn more.

Marion Murray
Utah State University
(435) 797-0776
marion.murray@usu.edu

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.

For detailed information on SARE projects, go to www.SARE.org
Utah has been awarded $5,358,896 grants to support 72 projects, including but not limited to, 31 research and/or education projects, 8 professional development projects and 19 producer-led projects. Utah 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>
</table>
| SW19-905  | Can we manage public rangelands for producers and the environment?: Using grazing-duration to balance livelihoods, clean water, sage-grouse habitat, and sustainable forage | $349,979     | Dr. Kris Hulvey  
Working Lands Conservation 
Taylor Payne  
Utah Department of Agriculture’s Grazing Improvement Program |
| SW19-909  | Identifying Stacked Conservation Practices that Optimize Water Use in Agriculture | $349,977     | Matt Yost  
Utah State University 
Niel Allen  
Utah State University 
Dr. Earl Creech  
Utah State University 
Neil Hansen  
Brigham Young University 
Matthew Heaton  
Brigham Young University 
Dr. Bryan Hopkins  
BYU 
Ross Spackman  
Brigham Young University-Idaho |
| SW18-058  | Establishing a protocol for receiving cattle that are at-risk of having a mineral deficiency | $206,209     | Dr. Kara Thornton  
Utah State University |
| SW17-077  | Best Management Practices for Regionally-Distinct Populations of the Blue Orchard Bee | $246,910     | Theresa Pitts-Singer  
USDA Agricultural Research Service |
| SW17-046  | Grass-birdsfoot trefoil mixtures to improve the economic and environmental sustainability of pasture-based organic dairies in the western U.S. | $214,123     | Dr. Blair Waldron  
USDA-ARS |
| SW15-003  | Training cattle to graze medusahead and avoid velvet lupine: A new tool to sustain the economic viability of livestock operations in the Western US | $249,909     | Dr. Juan Villalba  
Utah State University |
| SW15-029  | Improving Tart Cherry Sustainability                                           | $230,154     | Dr. Brent Black  
Utah State University |
| SW14-015  | Integrated Byproduct Streams for Enhanced Viability of Combined Dairy Farm and Milk Processing Operations | $295,688     | Dr. Donald McMahon  
Western Dairy Center, Utah State University |
| SW13-034  | Onion Systems Management Strategies for Crop Nutrition, Weeds, Thrips, and Iris Yellow Spot Virus | $169,299     | Dr. Diane Alston  
Utah State University |
Grass-Legume pastures to increase economic and environmental sustainability of livestock production

Cultural Management of Onion Thrips and Iris yellow Spot Virus

High Value Crop Rotations for Utah High Tunnels

Sustainable Vegetable Production: Screening Cover Crops for Water Use Efficiency

Perennial Forage Kochia for Improved Sustainability of Grass-Dominated Ecosystems

Sustainable Water Management for Irrigated Asparagus

Value Added Opportunities from the Manufacture and Feeding of Silages Produced from Liquid Cheese Whey and Other By-products to Growing and Finishing Cattle and Beef Cows

Production of Drought-adapted Intermountain Native Plants Through Low-cost, In-containers for Emerging Western Markets

Biofumigants in Commercial Onion Production to Enhance Soil Nutrient Availability, Soil Quality, and Control of Weed, Nematode, and Disease Pests

Assessment of Value Added Milk from Pasture-based Dairies

Impact Assessment of Western Region SARE Projects

In-house composting in high-rise, caged layer facilities

The Effects of Altering the Protein Efficiency of Lactating Dairy Cows on the Whole-farm Nitrogen Efficiency of Dairy Farms: Subcontract 1

The Effects of Altering the Protein Efficiency of Lactating Dairy Cows on the Whole-Farm Nitrogen Efficiency of Dairy Farms.

The Effects of Altering the Protein Efficiency of Lactating Dairy Cows on the Whole-Farm Nitrogen Efficiency of Dairy Farms.

Reducing Chemical Inputs in Arid-Climates Through Sustainable Orchard Management
<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW96-032</td>
<td>Identification of Management Practices and Cultivars for Organic Hard-Winter</td>
<td>$93,911</td>
<td>David Hole</td>
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<td></td>
<td>Wheat Production</td>
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<td>Utah State University</td>
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<tr>
<td>SW95-015</td>
<td>Public-Land Grazing Permittees Under Pressure: Sustainability of Coping</td>
<td>$63,000</td>
<td>D. Layne Coppock</td>
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<tr>
<td></td>
<td>Strategies on Private Land</td>
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<td>Utah State University</td>
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<tr>
<td>SW95-006</td>
<td>A Livestock Production System Less Reliant on the Use of Publicly Owned</td>
<td>$60,000</td>
<td>Randall D. Wiedmeier</td>
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<tr>
<td></td>
<td>Lands</td>
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<td>Utah State University</td>
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<tr>
<td>LWD93-006</td>
<td>Navajo Nation Whole Farm/Ranch Sustainable Systems Demonstration Project</td>
<td>$14,000</td>
<td>Lyle G. McNeal</td>
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<tr>
<td>LWD93-034</td>
<td>Four Corners Navajo Nation Sustainable Agriculture Demonstration Project</td>
<td>$100,000</td>
<td>Lyle G. McNeal</td>
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<tr>
<td>LWD92-005</td>
<td>Conference on the Science of Sustainable Agricultural Systems</td>
<td>$15,500</td>
<td>David Bezdicek</td>
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<td></td>
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<td>Washington State University</td>
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**RESEARCH TO GRASS ROOTS GRANTS**

<table>
<thead>
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<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
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<tbody>
<tr>
<td>RGR20-007</td>
<td>Using the Wyoming Ranch Tools site to evaluate selected Western SARE research</td>
<td>$61,160</td>
<td>Bridger Feuz</td>
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<td></td>
<td>projects to assess economic sustainability for individual producers</td>
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<td>Master Stockman Consulting</td>
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**PROFESSIONAL DEVELOPMENT PROGRAM GRANTS**

<table>
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<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
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<tbody>
<tr>
<td>WPDP19-14</td>
<td>Enhancing Enterprise Diversification Assessment for Native American Farmers</td>
<td>$67,650</td>
<td>Ruby Ward</td>
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<tr>
<td></td>
<td>to Enhance Economic Sustainability</td>
<td></td>
<td>Utah State University</td>
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<td></td>
<td></td>
<td></td>
<td>Vicki Hebb</td>
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<td></td>
<td></td>
<td></td>
<td>Trent Teegerstrom</td>
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<td></td>
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<td></td>
<td>University of Arizona</td>
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<tr>
<td>EW15-023</td>
<td>Sustaining the Future of Navajo Rangelands via Mobile Learning Tools to</td>
<td>$62,260</td>
<td>Dr.Gerald Hawkes</td>
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<td></td>
<td>Promote Enhanced Vegetation Management</td>
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<td>New Mexico State University</td>
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<tr>
<td>EW14-017</td>
<td>Building Business Management Capacity for American Indian Agricultural</td>
<td>$75,000</td>
<td>Ruby Ward</td>
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<td>Businesses</td>
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<td>Utah State University</td>
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<tr>
<td>EW13-005</td>
<td>Economic Evaluation of Agricultural Diversification through Agritourism for</td>
<td>$74,492</td>
<td>Dr.Kynda Curtis</td>
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<td></td>
<td>the Intermountain West</td>
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<td>Utah State University</td>
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<tr>
<td>EW09-007</td>
<td>Economic Evaluation of Alternative (low-water use) Crops for the Great Basin</td>
<td>$99,724</td>
<td>Carol Bishop</td>
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<td>University of Nevada Cooperative Extension</td>
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<td></td>
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<td>Dr.Kynda Curtis</td>
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<td>Utah State University</td>
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<tr>
<td>EW06-005</td>
<td>Entrepreneurial Sustainable Agriculture: Alternatives for Processing, Packing,</td>
<td>$58,755</td>
<td>John C. Allen, PhD</td>
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<td></td>
<td>Labeling and Marketing in Internet/Retail Environments</td>
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<td>Western Rural Development Center</td>
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<tr>
<td>EW06-018</td>
<td>Disseminating Research-based Information to Improve Great Basin Rangelands</td>
<td>$21,605</td>
<td>Summer Olsen</td>
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<td></td>
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<td>Mark Brunson</td>
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<tr>
<td>EW04-010</td>
<td>Communication of Range Demonstration Project Results</td>
<td>$15,045</td>
<td>Ken Mills</td>
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<td>Utah Association of Conservation Districts</td>
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<tr>
<td>Project #</td>
<td>Project Title</td>
<td>SARE Support</td>
<td>Project Leaders</td>
</tr>
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</tbody>
</table>
| FW19-343 | Can barley fodder be fed in place of grass hay to dairy goats and dairy sheep and what effect will it have on milk production and composition. | $19,407      | Anita Wilson  
Milky Hollow Creamery                                       |
| FW07-315 | Bramble Variety Trials in Utah to Reduce Disease, Increase Production and Enhance Profitability | $23,250      | Rick Heflebower  
Utah State University                                          |
| FW06-012 | Interseeding Forage Kochia in Established CRP Land for Enhanced Livestock and Wildlife Utilization | $7,621       | Ron Harper                                             |
| FW06-027 | Commercial Artichokes in the Intermountain West                                           | $5,180       | James Haggarty  
Sun River Farms                                                      |
| FW06-327 | Integrating Annual Crop Residues, Perennial Pastures, and Livestock Management to Extend the Grazing Season and Minimize Losses of Soil Nitrogen | $10,000      | Thomas Griggs  
Utah State University                                                |
| FW05-022 | Increasing the Profitability of Raspberries by Extending the Growing Season                  | $2,310       | Clark Willis                                           |
| FW04-014 | Goats as a Weed Control Alternative in Small Acreage Ranchettes                                        | $3,382       | Kyle Christensen                                      |
| FW04-037 | Tomato Disease Prevention and Production Enhancement                                               | $2,095       | Aviva Maller-O’Niel  
Rick Heflebower  
Utah State University                                              |
| FW04-314 | Organic Dairy Transition in Northern Utah                                                             | $7,500       | Clark Israelsen  
Utah State University Cooperative Extension                        |
| FW03-306 | Season Extension Experiment                                                                      | $1,250       | Rick Heflebower  
Utah State University                                              |
| FW03-201 | Winter Cover Crop Experiment                                                                      | $1,120       | Aviva Maller-O’Niel                                    |
| FW00-019 | Medusahead Control and Revegetation in Southern Cache County, UT                                | $6,414       | Guy Pulsipher                                           |
| FW00-054 | Southern Utah Forest Products Association Cooperative Marketing Act                             | $4,835       | Brian Cottam                                             |
| FW00-317 | The Original Cache Junction Families Popped Wheat                                                  | $2,801       | Wes Roundy                                             |
| FW99-080 | Composting Poultry Waste Inside High Rise Layer Houses                                            | $4,992       | Mike Shepherd                                           |
| FW99-117 | Hovenweep Burn Reseeding and Demonstration Area                                                   | $4,000       | Mary Tso                                                |
### GRADUATE STUDENT GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| GW20-215   | Identification of effective cover crop varieties and integrated management practices for weedy and invasive plant suppression in the Western US | $25,000      | Steve Young  
Utah State University  
Danielle Thiemann  
Utah State University  
Danielle Thiemann  
Utah State University |
| GW18-106   | Brown Marmorated Stink Bug in Utah's Intermountain West                        | $24,999      | Dr.Diane Alston  
Utah State University  
Mark Holthouse  
Utah State University |
| GW18-156   | Utilizing Tannin-Containing Forages and Holos Software for Sustainable Beef Production in the Intermountain West | $20,204      | Dr.Jennifer Reeve  
Utah State University  
Kathryn Slebodnik  
Utah State University |
| GW17-060   | Navajo Spinach (Cleome Serrulata): Improving Seed Germination from Wild Populations Gathered across Native Lands of the Four Corners | $24,969      | Dr.Daniel Drost  
Utah State University  
Reagan Wytsalucy  
Utah State University |
| GW15-046   | Improved simple on-site soil quality testing for soils in the Intermountain West | $24,844      | Dr.Jennifer Reeve  
Utah State University  
Esther Thomsen  
USU |
| GW13-006   | Determination of gas emissions from manure sources in animal feeding operations | $25,000      | Scott B. Jones  
Utah State University  
Dr.Rhonda Miller  
WSARE  
Pakorn Sutitarnmontr  
Biological Engineering Department, Utah State University |
| GW12-030   | Contributions to pest suppression through predator phenology and functional diversity | $13,095      | Dr.Ricardo Ramirez  
Utah State University  
Erica Stephens  
Utah State University |

### 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>
| OW19-346   | Promoting crop diversification and soil health for cut flower production     | $49,999      | Dr.Melanie Stock  
Utah State University  
Dr.Brent Black  
Utah State University  
Dr.Daniel Drost  
Utah State University  
Dr.Larry Rupp  
Utah State University |
<table>
<thead>
<tr>
<th>Code</th>
<th>Project Title</th>
<th>Funding</th>
<th>Names and Institutions</th>
</tr>
</thead>
</table>
| OW19-343 | Management strategies for Tomato spotted wilt virus and curtoviruses in Utah | $31,149  | Claudia Nischwitz  
Utah State University  
Dr. Diane Alston  
Utah State University  
Richard Heflebower  
Utah State University Extension - Washington County |
| OW18-007 | Supporting Natural Enemies of the Cabbage Aphid with Hedgerow Plantings     | $48,554  | Laura Horn  
Wild Bee Project |
| OW14-036 | Biochar Amendment to Enhance Tomato and Melon Productivity and Protect Against Phytophthora Root Rot Disease | $49,990  | Marion Murray  
Utah State University |
| OW13-005 | Rangeland Restoration on the Channel Scablands of Eastern Washington          | $49,931  | Dr. Kip Panter  
USDA-ARS-PPRL |
| OW12-020 | Feedlot performance, feed efficiency, and profitability of cattle fed either a complete mixed ration or allowed to voluntarily select their diet. | $49,967  | Beth Burritt  
Utah State University |

**Total funding from the USDA SARE program to Utah**

$5,358,896

For further information on projects, contact Western SARE at (435) 797-2257 or wsare@usu.edu. Sustainable Agriculture Research and Education (SARE) is funded by USDA’s National Institute of Food and Agriculture (NIFA).