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 $354 million to more than 8,043 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.

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.

SARE in Utah

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

$7,040,807 in total funding

83 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: 83 grants
- 36 Research and Education
- 11 Professional Development Program
- 21 Farmer/Rancher
- 8 Graduate Student
- 6 On Farm
- Research/Partnership
- 1 Research to Grass Roots

Total funding: $7,040,807

- $5,597,668 Research and Education
- $751,960 Professional Development Program
- $162,319 Farmer/Rancher
- $188,111 Graduate Student
- $279,590 On Farm
- Research/Partnership
- $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

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.
Utah has been awarded $7,040,807 grants to support 82 projects, including but not limited to, 35 research and/or education projects, 11 professional development projects and 21 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>
<tbody>
<tr>
<td>SW22-942</td>
<td>Using grazing-duration to balance: livelihoods, clean water, sage-grouse habitat, and sustainable forage in semi-arid rangelands</td>
<td>$328,329</td>
<td>Dr.Kris Hulvey, Working Lands Conservation, Taylor Payne, Utah Department of Agriculture’s Grazing Improvement Program</td>
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<tr>
<td>SW22-941</td>
<td>Identifying Stacked Conservation Practices that Optimize Water Use in Agriculture: Phase II</td>
<td>$350,000</td>
<td>Matt Yost, Utah State University, Dr.Earl Creech, Utah State University, Neil Hansen, Brigham Young University, Dr.Bryan Hopkins, BYU</td>
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<tr>
<td>SW21-927</td>
<td>Dry Matter Intake and Feed Efficiency of Four Dairy Breeds in a Pasture-Based Heifer Development Program</td>
<td>$299,935</td>
<td>Dr.Blair Waldron, USDA-ARS, Dr.Earl Creech, Utah State University, Dr.Clay Isom, Utah State University, Dept. of Animal, Dairy, and Veterinary Sc, Dr.Ryan Larsen, Utah State University, Dept. of Applied Economics, Dr.Rhonda Miller, WSARE, Dr.Kerry Rood, MPH, DVM, Utah State University, Dept. of Animal, Dairy, and Veterinary Sc</td>
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<tr>
<td>SW21-923</td>
<td>Developing sustainable strategies for nutrient and pest management on small-acreage strawberry farms</td>
<td>$349,736</td>
<td>Dr.Jennifer Reeve, Utah State University, Dr.Brent Black, Utah State University, Dr.Kynda Curtis, Utah State University, Dr.Robert Schaeffer, Utah State University</td>
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<tr>
<td>SW19-909</td>
<td>Identifying Stacked Conservation Practices that Optimize Water Use in Agriculture</td>
<td>$349,977</td>
<td>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</td>
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</tbody>
</table>
Can we manage public rangelands for producers and the environment?: Using grazing-duration to balance livelihoods, clean water, sage-grouse habitat, and sustainable forage

Establishing a protocol for receiving cattle that are at-risk of having a mineral deficiency

Grass-birdsfoot trefoil mixtures to improve the economic and environmental sustainability of pasture-based organic dairies in the western U.S.

Best Management Practices for Regionally-Distinct Populations of the Blue Orchard Bee

Improving Tart Cherry Sustainability

Training cattle to graze medusahead and avoid velvet lupine: A new tool to sustain the economic viability of livestock operations in the Western US

Integrated Byproduct Streams for Enhanced Viability of Combined Dairy Farm and Milk Processing Operations

Onion Systems Management Strategies for Crop Nutrition, Weeds, Thrips, and Iris Yellow Spot Virus

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
RESEARCH TO GRASS ROOTS GRANTS

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

PROFESSIONAL DEVELOPMENT PROGRAM GRANTS

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<tr>
<th>Project #</th>
<th>Project Title</th>
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<th>Project Leaders</th>
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<tbody>
<tr>
<td>LWD93-034</td>
<td>Four Corners Navajo Nation Sustainable Agriculture Demonstration Project</td>
<td>$100,000</td>
<td>Lyle G. McNeal, 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, Utah State University.</td>
</tr>
</tbody>
</table>
WPDP22-002 Training Agriculture Educators in Utah using the Wyoming Ranch Tools site and Western SARE research projects. $83,892 Bridger Feuz
Master Stockman Consulting
Hudson Hill
Master Stockman Consulting LLC.

WPDP22-014 Educating and training community leaders to implement water recycling approach in Utah’s landscapes and nursery industry $93,568 Dr. Shital Poudyal
Utah State University
Dr. Kelly Kopp
Utah State University and CWEL
Candace Schaalbe
Utah State University Extension - Iron County
Katie Wagner, Ms.
Utah State University Extension
Josh Zimmerman, Mr.
Utah Department of Natural Resources

WPDP21-012 Assisting Extension professionals in assessing profitable and sustainable agricultural enterprises with producer clientele $99,969 Dr. Kynda Curtis
Utah State University
Dr. Ryan Larson
Utah State University, Dept. of Applied Economics
Dr. Anastasia Thayer
Utah State University
Ruby Ward
Utah State University

WPDP19-14 Enhancing Enterprise Diversification Assessment for Native American Farmers to Enhance Economic Sustainability $67,650 Ruby Ward
Utah State University
Vicki Hebb
Trent Teegerstrom
University of Arizona

EW15-023 Sustaining the Future of Navajo Rangelands via Mobile Learning Tools to Promote Enhanced Vegetation Management $62,260 Dr. Gerald Hawkes
New Mexico State University

EW14-017 Building Business Management Capacity for American Indian Agricultural Businesses $75,000 Ruby Ward
Utah State University

EW13-005 Economic Evaluation of Agricultural Diversification through Agritourism for the Intermountain West $74,492 Dr. Kynda Curtis
Utah State University

EW09-007 Economic Evaluation of Alternative (low-water use) Crops for the Great Basin $99,724 Carol Bishop
University of Nevada Cooperative Extension
Dr. Kynda Curtis
Utah State University

EW06-018 Disseminating Research-based Information to Improve Great Basin Rangelands $21,605 Summer Olsen
Utah State University
Mark Brunson
Utah State University

EW06-005 Entrepreneurial Sustainable Agriculture: Alternatives for Processing, Packing, Labeling and Marketing in Internet/Retail Environments $58,755 John C. Allen, PhD
Western Rural Development Center

EW04-010 Communication of Range Demonstration Project Results $15,045 Ken Mills
Utah Association of Conservation Districts

FARMER/RANCHER GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
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<tbody>
<tr>
<td>FW22-400</td>
<td>Economic and Yield Potential of Hemp Waste Material in Specialty Mushroom Substrate</td>
<td>$24,282</td>
<td>Natasha Quinones-Rodriguez Intentional Growth</td>
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<tr>
<td>Project Number</td>
<td>Title of Project</td>
<td>Funding Amount</td>
<td>Principal Investigator</td>
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<tr>
<td>FW22-394</td>
<td>The Economics of Early Weaning and Early Breeding of Range Ewe Lambs</td>
<td>$22,200</td>
<td>Gene Peckham</td>
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<tr>
<td>FW19-343</td>
<td>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.</td>
<td>$19,407</td>
<td>Anita Wilson</td>
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<tr>
<td>FW07-315</td>
<td>Bramble Variety Trials in Utah to Reduce Disease, Increase Production and Enhance Profitability</td>
<td>$23,250</td>
<td>Rick Heflebower</td>
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<tr>
<td>FW06-327</td>
<td>Integrating Annual Crop Residues, Perennial Pastures, and Livestock Management to Extend the Grazing Season and Minimize Losses of Soil Nitrogen</td>
<td>$10,000</td>
<td>Thomas Griggs</td>
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<tr>
<td>FW06-027</td>
<td>Commercial Artichokes in the Intermountain West</td>
<td>$5,180</td>
<td>James Haggarty</td>
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<tr>
<td>FW06-012</td>
<td>Interseeding Forage Kochia in Established CRP Land for Enhanced Livestock and Wildlife Utilization</td>
<td>$7,621</td>
<td>Ron Harper</td>
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<tr>
<td>FW05-022</td>
<td>Increasing the Profitability of Raspberries by Extending the Growing Season</td>
<td>$2,310</td>
<td>Clark Willis</td>
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<tr>
<td>FW04-014</td>
<td>Goats as a Weed Control Alternative in Small Acreage Ranchettes</td>
<td>$3,382</td>
<td>Kyle Christensen</td>
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<tr>
<td>FW04-314</td>
<td>Organic Dairy Transition in Northern Utah</td>
<td>$7,500</td>
<td>Clark Israelsen</td>
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<tr>
<td>FW04-037</td>
<td>Tomato Disease Prevention and Production Enhancement</td>
<td>$2,095</td>
<td>Aviva Maller-O’Niel</td>
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<tr>
<td>FW03-201</td>
<td>Winter Cover Crop Experiment</td>
<td>$1,120</td>
<td>Aviva Maller-O’Niel</td>
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<tr>
<td>FW03-306</td>
<td>Season Extension Experiment</td>
<td>$1,250</td>
<td>Rick Heflebower</td>
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<tr>
<td>FW00-317</td>
<td>The Original Cache Junction Families Popped Wheat</td>
<td>$2,801</td>
<td>Wes Roundy</td>
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<tr>
<td>FW00-054</td>
<td>Southern Utah Forest Products Association Cooperative Marketing Act</td>
<td>$4,835</td>
<td>Brian Cotttam</td>
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<tr>
<td>FW00-019</td>
<td>Medusahead Control and Revegetation in Southern Cache County, UT</td>
<td>$6,414</td>
<td>Guy Pulsipher</td>
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<tr>
<td>FW99-080</td>
<td>Composting Poultry Waste Inside High Rise Layer Houses</td>
<td>$4,992</td>
<td>Mike Shepherd</td>
</tr>
<tr>
<td>FW99-117</td>
<td>Hovenweep Burn Reseeding and Demonstration Area</td>
<td>$4,000</td>
<td>Mary Tso</td>
</tr>
</tbody>
</table>
**Increased Forage Production during Alfalfa Rotation Years in Johnson Canyon, Utah. Biological Control of Scotch and Bull Thistle on Disturbed Alfalfa Pastures**

**Alternative Cropping For the Navajo Reservation**

**Pasture Aeration and Fertilizer Study**

**Enhancement of Samurai Wasp [Trissolcus japonicus (Ashmead)] for Biocontrol of Invasive Brown Marmorated Stink Bug [Halyomorpha halys (Stål)] in Utah**

**Identification of effective cover crop varieties and integrated management practices for weedy and invasive plant suppression in the Western US**

**Utilizing Tannin-Containing Forages and Holos Software for Sustainable Beef Production in the Intermountain West**

**Brown Marmorated Stink Bug in Utah's Intermountain West**

**Navajo Spinach (Cleome Serrulata): Improving Seed Germination from Wild Populations Gathered across Native Lands of the Four Corners**

**Improved simple on-site soil quality testing for soils in the Intermountain West**

**Determination of gas emissions from manure sources in animal feeding operations**

**Contributions to pest suppression through predator phenology and functional diversity**

**Management strategies for Tomato spotted wilt virus and curtoviruses in Utah**
<table>
<thead>
<tr>
<th>Project Code</th>
<th>Description</th>
<th>Funding</th>
<th>Principal Investigator(s)</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 |
| 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**

$7,040,807

For further information on projects, contact Western SARE at (406) 994-4789 or wsare@montana.edu.

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