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 $359 million to more than 8,143 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 Wyoming

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

$3,008,926 in total funding

55 grant projects (since 1988)

For more information on this project, see sare.org/projects, and search for project number GW16-038.

Project Highlight: A Better Way to Identify Livestock Disease

Despite measures that had successfully eradicated brucellosis in cattle and stopped its spread to humans, the deadly disease can still be found in elk and bison in the greater Yellowstone area. Over the past 10 years, the disease began spreading to local livestock, leading to expensive quarantines and economic losses to producers as they choose to, or are required to, euthanize cattle to undergo imperfect and time-consuming diagnostic testing. A positive result from the currently used test does not guarantee that the animal was in fact infected.

To reduce these burdens on ranchers, University of Wyoming graduate student Noah Hull worked to increase the ability to identify animals infected with brucellosis in the greater Yellowstone area by creating and validating a new molecular assay. As the project progressed, Hull found that this test was twice as effective as the traditional method at identifying animals that were truly infected. Perhaps more meaningfully to producers, the new testing procedure can be done on animals while still alive, which could lead to a reduction in culling. The turnaround time for results is much faster as well. To spread the word about his findings, Hull held four stakeholder meetings in the state that reached 120 participants.

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

Total awards: 55 grants
- 16 Research and Education
- 6 Professional Development Program
- 19 Farmer/Rancher
- 10 Graduate Student
- 4 On Farm Research/Partnership

Total funding: $3,008,926
- $1,927,576 Research and Education
- $425,624 Professional Development Program
- $203,556 Farmer/Rancher
- $230,089 Graduate Student
- $222,082 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: western.sare.org/sare-in-your-state/wyoming

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/wyoming to learn more.

Caitlin Youngquist
University of Wyoming
(307) 347-3431
cyoungqu@uwyo.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.
Wyoming has been awarded $3,008,926 grants to support 54 projects, including but not limited to, 15 research and/or education projects, 6 professional development projects and 19 producer-led projects. Wyoming 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>SW18-021</td>
<td>Integrating livestock and cover crops into irrigated crop rotations</td>
<td>$249,954</td>
<td>Dr. Jay Norton&lt;br&gt;University of Wyoming&lt;br&gt;John Ritten&lt;br&gt;University of Wyoming</td>
</tr>
<tr>
<td>SW10-073</td>
<td>Prescribed Grazing to Sustain Livestock Production, Soil Quality, and Diversity in Rangeland Ecosystems</td>
<td>$197,268</td>
<td>Dr. Kenneth Tate&lt;br&gt;University of California Davis</td>
</tr>
<tr>
<td>SW07-049</td>
<td>Evaluation of Camelina sativa as an alternative seed crop and feedstock for biofuel and developing replacement heifers.</td>
<td>$155,000</td>
<td>Dr. Bret Hess&lt;br&gt;University of Wyoming</td>
</tr>
<tr>
<td>SW05-117</td>
<td>Integrated Crop and Livestock Systems: Dryland Crop Rotations to Improve Economic and Ecological Sustainability in the Central High Plains</td>
<td>$212,928</td>
<td>Dr. Steve Paisley&lt;br&gt;University of Wyoming</td>
</tr>
<tr>
<td>SW04-051</td>
<td>Record Management Computer Database for Wyoming Cow-Calf Producers</td>
<td>$18,563</td>
<td>Dallas Mount&lt;br&gt;University of Wyoming</td>
</tr>
<tr>
<td>SW03-008</td>
<td>Annual Legume-Based Systems for Sustainable Integrated Crop/Livestock Enterprise Diversification on the Central High Plains</td>
<td>$200,000</td>
<td>James Krall&lt;br&gt;University of Wyoming</td>
</tr>
<tr>
<td>SW02-011</td>
<td>Economic Impacts of Undernutrition on Fetal Programming during Early Gestation in the Cow: Effects on Growth, Development and Carcass Characteristics of Steers and Reproductive Efficiency of Heifers</td>
<td>$23,014</td>
<td>Stephen Ford&lt;br&gt;University of Wyoming</td>
</tr>
<tr>
<td>SW98-071</td>
<td>Annual Legumes in Fallow as an Integrated Crop/Livestock Alternative in the Central Great Plains.</td>
<td>$173,979</td>
<td>James Krall&lt;br&gt;University of Wyoming</td>
</tr>
<tr>
<td>SW97-018</td>
<td>Integrating nemadite-resistant crops into sugar beet rotations</td>
<td>$113,184</td>
<td>David Koch&lt;br&gt;University of Wyoming</td>
</tr>
<tr>
<td>SW96-010</td>
<td>Western Integrated Ranch/Farm Education</td>
<td>$36,326</td>
<td>John Hewlett&lt;br&gt;University of Wyoming, Department of Agricultural Economics</td>
</tr>
<tr>
<td>SW96-029</td>
<td>Potential of a Corn/Annual Medic Intercropping System for Weed Control, Reduced Soil Erosion and Improved Forage Production</td>
<td>$95,100</td>
<td>James Krall&lt;br&gt;University of Wyoming</td>
</tr>
</tbody>
</table>
### Sustainable Rangeland Based Beef Cattle Production Systems

- **Project Number:** SW95-007
- **Project Title:** Sustainable Rangeland Based Beef Cattle Production Systems
- **SARE Support:** $155,260
- **Project Leaders:** Michael A. Smith, University of Wyoming

### Legume Cover Crops in Fallow as an Integrated Crop/Livestock Alternative in the Northern and Central Great Plains

- **Project Number:** SW94-006
- **Project Title:** Legume Cover Crops in Fallow as an Integrated Crop/Livestock Alternative in the Northern and Central Great Plains
- **SARE Support:** $160,000
- **Project Leaders:** James Krall, University of Wyoming

### Western Integrated Ranch/Farm Education

- **Project Number:** SW94-034
- **Project Title:** Western Integrated Ranch/Farm Education
- **SARE Support:** $90,000
- **Project Leaders:** John Hewlett, University of Wyoming, Department of Agricultural Economics

### Brassica Utilization in Sugar Beet Rotations for Biological Control of Cyst Nematode

- **Project Number:** LW91-022
- **Project Title:** Brassica Utilization in Sugar Beet Rotations for Biological Control of Cyst Nematode
- **SARE Support:** $47,000
- **Project Leaders:** David Koch, University of Wyoming

### PROFESSIONAL DEVELOPMENT PROGRAM GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
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</tr>
</thead>
<tbody>
<tr>
<td>WPDP21-024</td>
<td>Rancher to Consumer Meat Connection</td>
<td>$75,648</td>
<td>Cody Gifford, University of Wyoming</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Scott Cotton, University of Wyoming</td>
</tr>
<tr>
<td>EW10-012</td>
<td>Equipping Extension Educators to Address Producer Needs in Energy Education</td>
<td>$99,596</td>
<td>Sarah Hamlen, MSU Extension</td>
</tr>
<tr>
<td>EW10-020</td>
<td>Ranch Sustainability Assessment: Economic, Ecological, &amp; Social Indicator Monitoring</td>
<td>$85,000</td>
<td>Dr. John Tanaka, University of Wyoming</td>
</tr>
<tr>
<td>EW07-016</td>
<td>Educator Training for the Wyoming Cow-Calf Record Management System</td>
<td>$9,500</td>
<td>Dallas Mount, University of Wyoming</td>
</tr>
<tr>
<td>EW00-024</td>
<td>Sustaining western rural landscapes, lifestyles, and livelihoods through agricultural enterprise diversification: a collaborative partnership.</td>
<td>$80,880</td>
<td>Boyd Byelich, USDA-NRCS</td>
</tr>
<tr>
<td>EW94-018</td>
<td>Extension Sustainable Agriculture Training in Colorado and Wyoming</td>
<td>$75,000</td>
<td>Joe Hiller, University of Wyoming, Cooperative Extension Service</td>
</tr>
</tbody>
</table>

### FARMER/RANCHER GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
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</tr>
</thead>
<tbody>
<tr>
<td>FW21-383</td>
<td>Trout Creek Pumpkin Patch: adding new revenue streams on a traditional cow/calf ranch</td>
<td>$14,750</td>
<td>Clint Wagon, Wagon Ranch</td>
</tr>
<tr>
<td>FW09-319</td>
<td>Enhancing Rural Agricultural Family and Community Development in Wyoming Through Sustainable Bioful Crop Production</td>
<td>$49,873</td>
<td>Donn Randall, Wyoming Business Council</td>
</tr>
<tr>
<td>FW08-307</td>
<td>Nitrogen Use Efficiency of Cool-Season Perennial Forage Grasses Planted With and Without Alfalfa Under Irrigation for Hay Production</td>
<td>$14,999</td>
<td>Dr. Blaine Horn, University of Wyoming</td>
</tr>
<tr>
<td>FW08-303</td>
<td>Utilizing Soil Moisture and Microclimate Monitoring Technology to Reduce Water and Energy Needs and Improve Sugar Beet Crop Production for Producers in the Big Horn Basin Region of Wyoming</td>
<td>$29,923</td>
<td>Caryn Agee, Washakie County Conservation District</td>
</tr>
<tr>
<td>FW06-021</td>
<td>Management of Iron Deficiency in Bean with Annual Ryegrass Interplantings</td>
<td>$9,505</td>
<td>Mike Ridenour</td>
</tr>
</tbody>
</table>
FW05-035 Brush Mower/Mixed Mountain Shrub Enhancement $19,370 Myrtle and Clyde McColloch JY Ranch
FW04-035 Tree Windbreak $7,500 Betty Rodriguez
FW04-030 Progeny Evaluation to Determine an Economically Based Index for Sire Selection $7,500 Sandra Snider
FW03-004 Wind and Water $6,000 Betty Rodriguez
FW02-210 Platte County Farmer's Market $2,434 Susan Schamel
FW02-207 BOS Grass Grown Premium Beef Marketing $7,495 James Millett
FW01-047 Prevention of High Altitude Disease Losses in Beef Cattle Utilizing PAP Test Scores, EPDs, and Gene-Mapping Techniques $7,500 Jon Robinett Diamond G. Cattle Co. LLC
FW00-278 Internet Marketing of Organically Grown Wyoming Gourmet Garlic $3,930 Steve Shesler
FW00-093 Pastured Poultry Production with Research on Sustainability of Grazing Lands $1,477 Joleen and Greg Marquardt
FW99-060 Improving Ranch Unit Stability and Sustainability through Grazing Irrigated Alfalfa $3,500 Rick March
FW96-023 Tall Stature Grasses for Winter Grazing and Spring Calving $2,800 Matt Weber
FW95-045 Integrated Management to Improve Rangeland Health and Reduce Noxious Weeds $5,000 Ogden Driskell Bearlodge Cattle Company
FW95-067 Initiation of Integrated Management $5,000 Tom Bruce
FW95-076 Flitner Wetland Habitat Enhancement Project $5,000 Mary & Stan Flitner

GRADUATE STUDENT GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| GW22-231  | Nitrogen Mineralization in High-Elevation Hay Meadow Soils for Improved Fertility Management | $29,921      | Dr. Jay Norton  
|           | University of Wyoming                                                        |              | Daniel Adamson  
|           | University of Wyoming                                                        |              |                |
| GW18-025  | The Critical Role of Soil Microbiota to Sustainable Agriculture: Quantifying short-term microbial and vegetation feedback to intensive grazing. | $24,184      | Linda Van Diepen  
|           | University of Wyoming                                                        |              | Emily Bean  
|           | University of Wyoming, The Pennsylvania State University                     |              |                |
GW18-170 Evaluation of Pulse Crops for Dryland Production $25,000 Dr.Carrie Eberle
University of Wyoming
Amberle Filley
University of Wyoming

GW17-059 Cattle Diets and Performance: Enhancing What We Know with Advanced Plant DNA Technology $24,970 John Derek Scasta
University of Wyoming
Tamarah Plechaty
University of Wyoming, Laramie & United States Department of Agriculture - Agricultural Research Service, Cheyenne, WY

GW16-038 Increasing sustainable agriculture through enhanced diagnostics with Brucella infection $24,818 Dr.Brant Schumaker, DVM, MPVM, PhD
University of Wyoming
Noah Hull, MPH
University of Wyoming

GW16-068 Conservation biological control of alfalfa weevil in Wyoming $7,280 Makenzie Benander
University of Wyoming

GW15-020 Economic and Environmental Sustainability of Irrigated Grass-Legume Mixtures $24,998 Dr.Anower Islam
University of Wyoming
Albert Adjesiwor
University of Wyoming

GW14-023 Improving Feed Efficiency in Sheep Through Rumen Manipulation and Producer Adoption $25,000 Dr.Kristi Cammack
University of Wyoming
Dr.Melinda Ellison
University of Idaho

GW11-007 Impacts of age on residual feed intake and its effect on reproductive parameters and profitability in ewes $24,990 Dr.Kristi Cammack
University of Wyoming
Dr.Rebecca Cockrum
Colorado State University

GW08-016 Potential of Managing Iron and Zinc Deficiency in Dry Beans with Interplantings of Annual Ryegrass and Increased Bean Density $18,928 Andrew Kniss
University of Wyoming
Emmanuel Omondi
University of Wyoming - Dept 3354

ON FARM RESEARCH/PARTNERSHIP GRANTS

Project # Project Title SARE Support Project Leaders
OW21-363 Kernza® in Wyoming: Evaluating Perennial Grains to Revitalize Wyoming Dryland Agriculture $74,804 Linda Van Diepen
University of Wyoming

OW20-355 Does cattle selection matter? Testing larkspur-native vs larkspur-naïve cattle to reduce death losses on larkspur infested rangelands. $49,991 Daniel Cook
USDA-ARS-Poisonous Plant Research Laboratory
Clint Stonecipher
US Department of Agriculture - Agricultural Research Service - Poisonous Plant Research Laboratory
Ben Green
USDA-ARS-Poisonous Plant Research Laboratory
Eric Thacker
Utah State University

OW19-340 Growing and Marketing Ancient Grains in Wyoming $49,995 Dr.Caitlin Youngquist
University of Wyoming

OW10-313 Residual Feed Intake - Producer Adoption and Genetic Selection Potential $47,292 Dr.Kristi Cammack
University of Wyoming

Total funding from the USDA SARE program to Wyoming
$3,008,926

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).