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 $333 million to more than 7,800 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: Advancing the Frontier of Sustainable Agriculture in...

California


Managing nitrogen (N) effectively helps farmers raise a high-quality crop, avoid wasting dollars and protect water quality. Yet in the highly productive Salinas Valley of Monterey County, many farmers who use organic practices lack complete information on effective N management. This is particularly true of beginning farmers and those who have a language barrier or otherwise have limited access to support services. Organic agriculture is booming in Monterey County: organic sales volume was $151 million in 2012. Ensuring that all organic growers have the best opportunity to succeed in a lucrative market was the motivation behind the Agriculture and Land-Based Training Association’s (ALBA) SARE grant.

ALBA collaborated with experienced farmers and Extension specialists to hold workshops on organic N management and on-farm research principles. It also provided in-depth, bilingual training and support to nine beginning farmers participating in its incubator program. ALBA’s grant allowed 500 growers and educators to benefit from workshops and publications focused on N management, and 91 percent of surveyed farmers reported adopting at least one new practice. By improving their knowledge on the subject and integrating new practices, the growers have positioned themselves for success.

For more information on this project, see sare.org/projects, and search for project number OW13-062.

SARE in California

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

$13,166,927 in total funding

217 grant projects

(since 1988)

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

Total awards: 217 grants
63 Research and Education
38 Professional Development Program
67 Farmer/Rancher
34 Graduate Student
13 On Farm Research/Partnership
2 Research to Grass Roots

Total funding: $13,166,927

$8,320,099 Research and Education
$2,502,547 Professional Development Program
$910,875 Farmer/Rancher
$712,565 Graduate Student
$634,140 On Farm Research/Partnership
$86,700 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/california

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/california to learn more.

Sonja Brodt
University of California Sustainable Agriculture Research & Education Program
(530) 754-8547
sbbrodt@ucdavis.edu

Jeffery Stackhouse
UCCE Livestock Advisor
(707) 445-7351
jwstackhouse@ucanr.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.
California has been awarded $13,166,927 grants to support 209 projects, including but not limited to, 55 research and/or education projects, 38 professional development projects and 67 producer-led projects. California has also received additional SARE support through multi-state projects.

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| SW20-912  | Use of Almond Hull and Shell as Organic Matter Amendments in Advanced Orchard Management | $349,807     | Dr. Sat Darshan Khalsa  
University of California Davis  
Dr. Patrick Brown  
University of California Davis  
Dr. Amelie Gaudin  
University of California, Davis |
| SW20-913  | Effective Management of Thousand Cankers Disease of Walnut through Disruption of Insect Vector Behavior | $349,770     | Dr. Richard Bostock  
University of California  
Dr. Daniel Kluepfel  
USDA - ARS, Crops Pathology and Genetics Research Unit  
Dr. Steven Seybold  
USDA Forest Service |
| SW20-919  | Biointensive no-till farming in California: farmer-driven research and education on soil health, water efficiency and economic resiliency | $251,036     | Dr. Timothy Bowles  
University of California Berkeley  
Amanda Hodson  
University of California, Davis  
Dr. Paul Rogé  
MESA, Inc. |
| SW19-902  | Potential Economic and Nitrogen Benefits of Fababean as a Double Purpose Cash and Cover Crop in Northern California | $348,772     | Dr. Hossein Zakeri  
California State University - Chico |
| SW19-908  | Quantifying the effects of rangeland conversion on ecosystem functions: Linking land use systems to enhance farm profitability | $349,327     | Fadzayi Elizabeth Mashiri  
University of California |
| SW18-063  | Quantifying the frequency and effects of secondary exposure to rodenticides in barn owls | $249,546     | Dr. Joshua Hull  
UC Davis |
| SW17-060  | UAS (Unmanned Aerial System)-guided releases of predatory mites for management of spider mites in strawberry | $249,878     | Dr. Elvira de Lange  
University of California Davis |
| SW14-011  | Farming for Native Bees | $247,649     | Dr. Gordon Frankie  
UC Berkeley |
| SW12-110  | The interaction of rangeland management and environmental conditions in regulating forage quality & quantity and other ecosystem services | $265,414     | Valerie Eviner  
UC Davis |
| SW11-116  | Integrated rotation systems for soil borne disease, weed and fertility management in strawberry/vegetable production | $218,424     | Joji Muramoto  
University of California, Santa Cruz |
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<th>Project Title</th>
<th>Award Amount</th>
<th>Principal Investigator/Institution</th>
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<tr>
<td>SW10-013</td>
<td>Control of Bacterial Wilt Disease of Ginger through an Integrated Pest Management Program</td>
<td>$289,245</td>
<td>Dr. Susan Miyasaka, University of Hawaii</td>
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<tr>
<td>SW10-801</td>
<td>A San Joaquin Valley Quilt: Stitching Together a Region’s Prosperity, Nutrition and Sustainability</td>
<td>$14,935</td>
<td>Daniel O’Connell, Sequoia Riverlands Trust</td>
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<td>SW10-803</td>
<td>Sierra CRAFT</td>
<td>$30,653</td>
<td>Bill Bennett, High Sierra RC&amp;D Council, Inc.</td>
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<td>SW10-810</td>
<td>Developing regional distribution networks to enhance farmer prosperity: Retail value chains</td>
<td>$24,906</td>
<td>Dr. Gail Feenstra, UC SAREP/ASI</td>
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<td>SW08-060</td>
<td>Triple-cropping Dairy Forage Production Systems Through Conservation Tillage in California’s San Joaquin Valley</td>
<td>$118,100</td>
<td>Dr. Jeff Mitchell, University of California, Davis</td>
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<td>SW07-022</td>
<td>Using Nectar Cover Cropping in Vineyards for Sustainable Pest Management</td>
<td>$178,300</td>
<td>Mark Hoddle, University of California, Dr. Nic Irvin, University of California</td>
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<td>SW06-033</td>
<td>Toward a Broader Vision of Sustainability: Social Equity in Sustainable Agriculture</td>
<td>$10,000</td>
<td>Ron Strochlic, California Institute for Rural Studies</td>
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<td>SW06-038</td>
<td>Grazing Strategies to Control Medusahead in California</td>
<td>$138,539</td>
<td>Dr. Emilio Laca, UC Davis</td>
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<td>SW06-091</td>
<td>Alternaria Control Using Biocontrol Yeast in Organic Pistachio Production Systems</td>
<td>$110,286</td>
<td>Dr. Dan Parfitt, UC Davis</td>
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<td>SW05-078</td>
<td>Smart Energy Management in Agriculture</td>
<td>$68,208</td>
<td>Karyn Wolf Lynn, Ecological Farming Association</td>
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<td>SW04-058</td>
<td>Fresh, From Our Family to Yours: Direct Marketing Education for Producers</td>
<td>$98,395</td>
<td>Molly Johnson, PlacerGROWN</td>
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<td>SW04-121</td>
<td>Farmland Tenure: A Tool Kit</td>
<td>$103,130</td>
<td>Steve Schwartz, California FarmLink</td>
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<tr>
<td>SW04-127</td>
<td>Educational Workshops on Organic Dairy Management</td>
<td>$39,377</td>
<td>Ken Andersen, University of California Cooperative Extension</td>
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<tr>
<td>SW03-037</td>
<td>Confirmation of Riparian Friendly Grazing Project Results and Development of Achievable, Site Specific Reference Conditions for Grazed Riparian Areas</td>
<td>$93,184</td>
<td>Dr. Kenneth Tate, University of California Davis</td>
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<td>SW02-008</td>
<td>Evaluation of the Effects of Vineyard Floor Management Practices on Soil Microbiology</td>
<td>$27,496</td>
<td>Richard Smith, University of California Cooperative Extension</td>
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<tr>
<td>SW02-020</td>
<td>Management of Vine Mealybugs in California’s San Joaquin Valley Through the Integration of Chemical and Biological Controls</td>
<td>$117,286</td>
<td>Kent Daane, Division of Insect Biology, UC Berkeley, Walter Bentley, UC Statewide IPM Project</td>
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<tr>
<td>SW02-034</td>
<td>Development and Dissemination of a Cowpea Cultivar for Cover Crops</td>
<td>$43,686</td>
<td>Dr. Milt McGiffen, Jr., University of California</td>
</tr>
</tbody>
</table>
Control of Western Tarnished Plant Bug (WTPB) Lygus hesperus Knight in Organic Strawberry Production Systems Using Trap Crops and Tractor-mounted Vacuums

Dr. Sean Swezey
Center for Agroecology and Sustainable Food System

Riparian Friendly Grazing Project

Dr. Kenneth Tate
University of California Davis

Transition to Organic Vegetable Production by Large-Scale Conventional Farmers

Louise Jackson
UC Davis

The Transition from Conventional to Low-Input or Organic Farming Systems: Soil Biology, Soil Chemistry, Soil Physics, Energy Utilization, Economics, and Risk

Steven Temple
University of California

Rotations with Broccoli - A Sustainable Alternative to Soil Chemical Fumigants

Krishna Subbarao
University of California, Davis

Cropping Systems for Intensive Desert Vegetable Production

Charles Sanchez
University of Arizona
Dr. Milt McGiffen, Jr.
University of California

Reducing Insecticide Use on Celery Through Low Input Pest Management Strategies

John T. Trumble
University of California, Department of Entomology

Decomposition and Nutrient Release Dynamics of Cover Crop Materials

Dr. Jeff Mitchell
University of California, Davis

Development and Implementation of Trap Cropping Strategies for Control of Hemipteran Pests in Pistachio Orchards

Kent Daane
Division of Insect Biology, UC Berkeley

The Transition from Conventional to Low-input or Organic Farming Systems: Soil Biology, Soil Chemistry, Soil Physics, Energy Utilization, Economics and Risk

Steven Temple
University of California

Tillage Practices for Improving Nitrogen Cycling and Soil Quality

Louise Jackson
UC Davis

Controlled Grazing on Foothill Rangelands

Roger Ingram
University of California Cooperative Extension

A Cover Crop System for Sustainable Grape Production in California - Beyond the Transition Phase

Frank G. Zalom
University of California

Development of a Farm-Wide System for Control of Many of the Principal Lepidopterous Pests of Grapes and Tree Fruits Based on Disruption of Premating Pheromone Communication Between Male and Female Moths

Harry H. Shorey
University of California

Managing Soil Biota in Low-Input and Organic Farming Systems to Enhance Soil Fertility

Kate Scow
University of California, Dept. of Land, Air, and Water Resources
<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| RGR20-006  | Building on Farmer Experience to Increase Cover Crops Adoption in Orchards and Vineyards | $74,594      | Dr. Sonja Brodt  
University of California Sustainable Agriculture Research & Education Program  
Lucas Patzek  
Napa County Resource Conservation District |
<table>
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<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| RGR20-010    | Potter Valley Tribe’s Native Mushroom Cultivation from Waste Byproduct Substrate for Food Sovereignty | $12,106      | Jade Swor  
Potter Valley Tribe  
Salvador Rosales, Sr.  
Potter Valley Tribe  
Salvador Rosales, Jr.  
Potter Valley Tribe  
Gregg Young  
Potter Valley Tribe |
|              |                                                                                |              |                                                                                                      |
| **PROFESSIONAL DEVELOPMENT PROGRAM GRANTS**                                                                                      |
| Project #    | Project Title                                                                 | SARE Support | Project Leaders                                                                                       |
| WPDP21-009   | Building Capacity to Reduce Human-Wildlife Conflict                           | $79,037      | Tracy Schohr  
UC Cooperative Extension  
Laura Snell  
UC Cooperative Extension |
| WPDP21-022   | Empowering Agricultural Professionals to Support Beneficial Birds and Discourage Pest Birds | $93,851      | Jo Ann Baumgartner  
Wild Farm Alliance  
Shelly Connor  
Wild Farm Alliance |
| WPDP21-005   | Farming Through Wildfire Season: Preparation, Resilience & Recovery           | $74,108      | Evan Wiig  
Community Alliance with Family Farmers  
Natalia Pinzón Jiménez  
Rhizobia, LLC |
| PDP20-009    | Filling the Gap – Exposing Agricultural Professionals to New and Innovative Small-Farm Tools | $74,982      | Rex Dufour  
National Center for Appropriate Technology (NCAT) |
| WPDP19-25    | Business of Farming (BoF) - Train the Trainer Program                         | $74,984      | Carolina Martinez  
California Association for Micro Enterprise Opportunity  
Carla Holland  
San Diego Small Business Development Center  
Andrew Seko  
CAMEO |
| WPDP19-12    | From Classroom to the Field: Soil Health Bottom Line: Expanding Adoption of Healthy Soils Practices by Quantifying the Economic and Environmental Benefits to Growers | $75,000      | Kara Heckert  
American Farmland Trust  
Anelkis Royce  
American Farmland Trust  
Anelkis Royce  
American Farmland Trust |
| EW18-024     | Organic Soil Health Education Resources for Agricultural Professionals in the Western Region | $74,138      | Brise Tencer  
Organic Farming Research Foundation |
| EW17-012     | Growing California Agritourism Communities                                    | $73,010      | Dr. Gail Feenstra  
UC SAREP/ASI |
| EW17-014     | Building Knowledge of Cover Cropping Techniques for Increased Adoption Rates   | $52,172      | Trina Walley  
East Stanislaus Resource Conservation District |
| EW16-018     | Facilitating Food Safety for Small, Sustainable Farms                         | $55,000      | nathan harkleroad  
ALBA  
Kaley Grimland  
ALBA |
| EW16-015     | Harmonizing Organic Standards and Food Safety Metrics                         | $74,970      | Dave Runsten  
Community Alliance with Family Farmers |
| EW16-026     | Assessment of Soil Biology and Plant Available Nitrogen for Soil Health and Water Quality | $49,690      | Hunter Francis  
CAFES Center for Sustainability |
<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Amount</th>
<th>Principal Investigator(s)</th>
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</thead>
<tbody>
<tr>
<td>EW14-036</td>
<td>Supporting Farmer Training Programs- in the Western States through Professional Development and Collaboration</td>
<td>$29,977</td>
<td>Nathan Harkleroad ALBA</td>
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<tr>
<td>EW13-008</td>
<td>High Residue Farming in the Irrigated Far West</td>
<td>$26,400</td>
<td>Andrew McGuire Washington State University Extension</td>
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<tr>
<td>EW13-022</td>
<td>Development and training of a national spray application work group</td>
<td>$57,862</td>
<td>Gwen-Alyn Hoheisel Washington State University</td>
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<tr>
<td>EW13-025</td>
<td>Building Tools and Technical Capacity to Improve Irrigation and Nutrient Management on California’s Central Coast</td>
<td>$39,564</td>
<td>Pamela Krone-Davis Monterey Bay Sanctuary Foundation</td>
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<tr>
<td>EW13-027</td>
<td>Application of Lessons Learned from NRCS Rangeland CEP: A site-specific, Low Cost System for Medusahead Control</td>
<td>$68,469</td>
<td>Jeremy James University of California</td>
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<tr>
<td>EW12-017</td>
<td>Training Manuals and Professional Development Activities for Teaching Organic Farming and Marketing</td>
<td>$98,782</td>
<td>Dr. Daniel Press University of California Santa Cruz Ann Lindsey University of California Santa Cruz</td>
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<tr>
<td>EW12-033</td>
<td>FARMING STRATEGIES FOR COPING WITH CLIMATE CHANGE</td>
<td>$19,000</td>
<td>Renata Brillinger California Climate &amp; Agriculture Network</td>
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<tr>
<td>EW11-029</td>
<td>Cal Poly Professional Development Compost Training and Establishment of the Cal Poly Compost Project</td>
<td>$57,582</td>
<td>Hunter Francis CAFES Center for Sustainability</td>
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<tr>
<td>EW10-004</td>
<td>Capacity Building Workshops: Developing Regional Agritourism Networks for Agricultural Sustainability and Education</td>
<td>$59,558</td>
<td>Penny Leff UC Sustatinable Agriculture Research and Education Program (UC SAREP)</td>
</tr>
<tr>
<td>EW10-005</td>
<td>Understanding the Climate Benefits of Sustainable Agriculture</td>
<td>$11,905</td>
<td>Jeanne Merrill CA Climate &amp; Agriculture Network (CalCAN) Renata Brillinger California Climate &amp; Agriculture Network</td>
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<tr>
<td>EW09-004</td>
<td>Ecology and Management of Grazing, An Online Course</td>
<td>$84,826</td>
<td>Melvin George University of California</td>
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<tr>
<td>EW04-012</td>
<td>Adding Value to Grassfed Beef Niche Marketing Efforts</td>
<td>$60,000</td>
<td>Cynthia Daley California State University, Chico</td>
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<tr>
<td>EW03-004</td>
<td>Field Course for Agricultural Professionals on the Common Goals and Strategies of USDA’s National organic Standards and Resource Conservation Programs</td>
<td>$60,000</td>
<td>Rex Dufour National Center for Appropriate Technology (NCAT)</td>
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<tr>
<td>EW03-007</td>
<td>Extending Hedgerow Systems in California Agriculture</td>
<td>$60,000</td>
<td>Mark Cady Community Alliance with Family Farmers</td>
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<tr>
<td>EW02-005</td>
<td>Organic Farming Principles, Practices, and Materials: Resources for Western Region Extension and USDA Professionals</td>
<td>$101,907</td>
<td>Dr. Sean Swezey Center for Agroecology and Sustainable Food System David Chaney SAREP</td>
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<tr>
<td>EW01-010</td>
<td>Training and Education Outreach to NRCS and University of California CES staff to Convey Animal Nutrition</td>
<td>$81,950</td>
<td>Thomas Wehri CA Association Resource Conservation Districts</td>
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<td>Project #</td>
<td>Project Title</td>
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<td>Project Leaders</td>
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<tr>
<td>EW01-013</td>
<td>Promotion of Intergenerational Farm Transfers for Agricultural Sustainability and Farmland Production</td>
<td>$56,000</td>
<td>Steve Schwartz</td>
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<td>California FarmLink</td>
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<tr>
<td>EW00-012</td>
<td>Sharing Resources to Help Connect Farmers to Direct Marketing Niches</td>
<td>$96,578</td>
<td>David Chaney</td>
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<tr>
<td>EW98-001</td>
<td>Broadening the Audience: Providing Sustainable Agriculture Education for Pest Control Advisers and Agricultural Consultants in California and Oregon</td>
<td>$80,100</td>
<td>David Chaney</td>
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<tr>
<td>EW97-002</td>
<td>Sustainable Range &amp; Pasture Livestock &amp; Dairy Production Training For Resource Professionals</td>
<td>$29,000</td>
<td>Roger Ingram</td>
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<tr>
<td>EW96-005</td>
<td>Multidisciplinary On-Site Training in Sustainable Agriculture Education</td>
<td>$97,432</td>
<td>Steven Temple</td>
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<tr>
<td>EW96-009</td>
<td>Sustainable Agriculture Curriculum Development Project for Extension Professionals in California’s San Joaquin Valley and Central Coast Regions</td>
<td>$98,773</td>
<td>David Chaney</td>
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<tr>
<td>EW96-010</td>
<td>Sustainable Arid Land Grazing Systems: Training for Managers of Public Land and Reserves</td>
<td>$29,000</td>
<td>William Olkowski</td>
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<tr>
<td>EW96-011</td>
<td>Professional Training in Biologically Integrated Orchard Systems</td>
<td>$155,940</td>
<td>Jill Klein</td>
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<tr>
<td>EW95-015</td>
<td>A Consortium-Based Sustainable Agriculture Training Program (SATP) Curriculum Plan</td>
<td>$20,000</td>
<td>Dr. Sean Sweeney</td>
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<tr>
<td>EW94-003</td>
<td>Multidisciplinary On-Site Training in Sustainable Agriculture Education</td>
<td>$71,000</td>
<td>Steven Temple</td>
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<td>University of California</td>
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**FARMER/RANCHER GRANTS**

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<tr>
<td>FW21-376</td>
<td>Evaluating Different Value-added Grains for Lassen County</td>
<td>$25,000</td>
<td>Thomas Traphagan</td>
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<td>Sunset Ranch</td>
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<td>FW21-377</td>
<td>The effects of biochar soil amendments on industrial hemp yields</td>
<td>$25,000</td>
<td>Tony De Veyra</td>
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<td>Fifth World Llc</td>
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<tr>
<td>FW21-379</td>
<td>Increasing food yields from urban and peri-urban farms through deployment of small-scale agricultural technologies</td>
<td>$25,000</td>
<td>David Blume</td>
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<td>Whiskey Hill Farm/Blume Distillation</td>
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<tr>
<td>FW21-385</td>
<td>Increased Profitability for Small Farms in Silicon Valley Through Year-Round Production of Baby Greens</td>
<td>$23,204</td>
<td>Sam Thorp</td>
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<td>Spade and Plow Organics LLC</td>
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<tr>
<td>FW21-386</td>
<td>Improving Soil Health with biochar and compost application in North Coast Vineyards</td>
<td>$24,583</td>
<td>Dr. Michael Sipiora</td>
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<td>Treasury Wine EStates</td>
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<td>FW21-387</td>
<td>Using Flavonoid and Polyphenol Testing of Honey to Improve Consumer Education</td>
<td>$25,000</td>
<td>Alisha Taff</td>
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<td>Rock Front Ranch</td>
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<td>FW20-364</td>
<td>Adding value to grassfed cattle operations by restoring rangeland health with targeted grazing on California’s Central Coast</td>
<td>$19,673</td>
<td>Elizabeth Reikowski Willow Creek Land and Cattle, LLC</td>
</tr>
<tr>
<td>FW20-365</td>
<td>Mitigating on-farm toxins using fungi: a case study on two farms.</td>
<td>$19,881</td>
<td>Christopher Tchudi TurkeyTail Farm</td>
</tr>
<tr>
<td>FW19-346</td>
<td>Grazing of annual brassicas to extend grazing season in summer-dry pastures in Northern California</td>
<td>$19,109</td>
<td>Cody Wood Willamette Valley Lamb</td>
</tr>
<tr>
<td>FW19-355</td>
<td>Drill-seeding blue oak acorns: a new method for restoration in California’s rangelands.</td>
<td>$19,920</td>
<td>Alex Palmerlee Far View Ranch Inc.</td>
</tr>
<tr>
<td>FW18-027</td>
<td>Farm-to-Glass: Performance Testing Different Varieties of Malting Barley</td>
<td>$19,908</td>
<td>Bob Adams Bob Adams</td>
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<td>FW18-042</td>
<td>Converting tree nut byproducts into gourmet mushrooms and mulches</td>
<td>$19,952</td>
<td>Charlie Long Chen Nature Prize LLC</td>
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<td>FW18-044</td>
<td>Examining the practical on-ranch application and benefits of low-stress herding and stockmanship techniques</td>
<td>$19,980</td>
<td>Michael Williams Diamond W Cattle Company</td>
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<td>FW17-054</td>
<td>Honeybee Regeneration Project</td>
<td>$19,851</td>
<td>Aidan Wing Aidan Wing</td>
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<td>FW16-033</td>
<td>Sorrel Pesto: The Positive Implications of Sorrel as a Substitute for Basil in Pesto Production</td>
<td>$19,710</td>
<td>David Ceaser Green Skies Vertical Farm</td>
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<td>FW16-034</td>
<td>Sustainable Irrigation Demonstration Project: Demonstrating Irrigation Efficiency in California Winegrapes through Advanced Practices and Technologies</td>
<td>$19,180</td>
<td>Jason Melvin Zabala Vineyards</td>
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<td>FW16-036</td>
<td>Improving Water Use Efficiency in Conventional and Organic Almonds through Data Driven Irrigation</td>
<td>$19,878</td>
<td>Pat Ricchiuti P R Farms, Inc.</td>
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<td>FW15-029</td>
<td>High Desert High Tunnels</td>
<td>$5,183</td>
<td>Laurie Wayne Locavore Farms</td>
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<td>FW14-024</td>
<td>Vines And Ovines: Benefits of Target Grazing to Sheep and Vineyard Industries</td>
<td>$14,991</td>
<td>Jaime Irwin Kaos Sheep Outfit</td>
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<td>FW11-037</td>
<td>Use of Wood Ash as Soil Amendment on Annual Rangelands</td>
<td>$28,995</td>
<td>Mel Thompson Sierra Farms Glenn Nader University of California Cooperative Extension</td>
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<td>FW10-037</td>
<td>Woolgathering on the Farm</td>
<td>$7,165</td>
<td>Sophie Sheppard Woolgathering</td>
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<td>FW08-030</td>
<td>Creating and Marketing Value-Added Orchard Products</td>
<td>$15,000</td>
<td>Nicholas Salle Salle Orchards Billie Jean Salle Salle Orchards</td>
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<td>FW08-047</td>
<td>Sierra Nevada Small Farm Progress Days</td>
<td>$27,370</td>
<td>Dan Macon</td>
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| FW08-311   | Restoring Plant Diversity and Soil Health in Napa and Sonoma Vineyards: scaling up an agroecologically based pest management strategy | $30,000 | Houston Wilson  
UC Berkeley -- ESPM  
Miguel Altieri  
University of California, Berkeley |
| FW08-312   | Effects of Aleutian Geese on Humboldt County Pastures                                           | $28,540 | Alan Bower  
University of California Davis |
| FW08-315   | Vines and Ovines: Using Trained Sheep for Vineyard Floor Grazing                                | $29,193 | Morgan Doran  
University of California |
| FW08-324   | Placer Ag Futures Project                                                                       | $25,670 | Bill Bennett  
High Sierra RC&D Council, Inc.  
Kay Joy Barge  
High Sierra Resource |
| FW07-303   | Farm Direct Distribution                                                                       | $25,444 | Brigitte Moran  
Marin Farmers Market Association |
| FW07-311   | Building on Organic Knowledge: On-Farm Transfer of a Trap Cropping Method to Control Lygus Bug in Conventional Strawberry Production | $14,864 | Dr. Sean Swezey  
Center for Agroecology and Sustainable Food System |
| FW07-324   | Management Challenges for Dairy Goat Sustainability                                              | $15,360 | Deborah Giraud  
University of California |
| FW06-304   | Using Molasses as an Attractant for Concentrating Grazing on Medusahead                          | $3,479  | Morgan Doran  
University of California |
| FW06-308   | Conservation Tillage Forage Production in California’s San Joaquin Valley                       | $9,400  | Dr. Jeff Mitchell  
University of California, Davis |
| FW05-020   | Goats in the Chaparral                                                                           | $19,990 | Bill Burrows |
| FW05-026   | Sustaining an Agricultural Region: Capay Valley Grown                                            | $14,980 | Judith Redmond  
Full Belly Farm |
| FW05-030   | Evaluation of abalone effluent for reclamation                                                    | $7,685  | Douglas Bush  
The Cultured Abalone |
| FW04-024   | A pilot project for zero discharge farming                                                        | $3,250  | Alan Haight  
Riverhill Farm |
| FW04-028   | Organic Vineyard/Orchard Weed and Grass Management Using Miniature Sheep                         | $7,472  | Deborah Walton  
Canvas Ranch |
| FW04-111   | Marketing Locally Grown                                                                          | $10,000 | Mary Ann Vasconcellos |
| FW03-007   | Integrated Pest Management and Sustainable Grape Production in Sonoma County                   | $13,000 | Nick Frey  
Sonoma County Grape Growers Assn. |
<p>| FW03-009   | Unconventional Conversion: Cultivating Sustainability in Citrus and Avocado Orchards             | $7,500  | Zachary Griffin |</p>
<table>
<thead>
<tr>
<th>Project Code</th>
<th>Project Title</th>
<th>Budget</th>
<th>Principal Investigator(s)</th>
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<tr>
<td>FW03-010</td>
<td>Increasing Adoption of Sustainable Practices in Central Coast Vineyards</td>
<td>$13,000</td>
<td>Kris Beal Vineyard Team</td>
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<td>FW03-013</td>
<td>Can Llamas Be an Effective Tool for Predator Control?</td>
<td>$6,500</td>
<td>Jill Hackett Howe Creek Ranch</td>
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<td>FW03-015</td>
<td>Pastured Pork: Economics of Intensive Grazing in the Western United States</td>
<td>$6,550</td>
<td>John Currey CR Pigs</td>
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<td>FW03-105</td>
<td>Bay Area Agricultural Cooperative</td>
<td>$13,000</td>
<td>John Lagier Lagier Ranches</td>
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<td>FW03-107</td>
<td>Marin Organics Cooperative Marketing Program</td>
<td>$13,500</td>
<td>Warren Weber Star Route Farms</td>
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<td>FW03-318</td>
<td>Conservation of Groundwater Resources in the Mojave High Desert Region through Producer Education of Irrigation Management</td>
<td>$6,285</td>
<td>Grant Poole University of California Cooperative Extension</td>
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<td>FW02-211</td>
<td>Marin Organic’s Cooperative Marketing Outreach</td>
<td>$9,191</td>
<td>Warren Weber Star Route Farms</td>
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<td>FW02-213</td>
<td>Establishing a Market for Sustainable Agricultural Products in Sierra Nevada Foothill Counties</td>
<td>$12,900</td>
<td>Ed Rich</td>
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<td>FW01-089</td>
<td>Symphylans: A growing menace. A look into its detection, damage, and control in a small-scale Biointensive Community Supported Agriculture Project.</td>
<td>$6,270</td>
<td>Michelle Vesser Small Farm / Specialty Crops</td>
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<td>FW00-005</td>
<td>Production of Strawberry Plants using Sterile Soil Amendments</td>
<td>$5,000</td>
<td>Allen Albaugh</td>
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<td>FW00-008</td>
<td>Tracking Costs and Returns in a Transition to Grass-Based Dairying</td>
<td>$1,139</td>
<td>Dean Martin</td>
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<td>FW00-010</td>
<td>Soil Solarization for Weed and Disease Control in Specialty Crops</td>
<td>$4,975</td>
<td>Mike Smith</td>
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<td>FW00-021</td>
<td>Water Use of Wine Grapes in the Granitic Soils of the Fair Play Wine Region in the Sierra Foothills</td>
<td>$10,000</td>
<td>Brian Fitzpatrick</td>
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<td>FW00-080</td>
<td>Moving From Selling Through Intermediaries to Direct Marketing Using Cause Related Marketing Strategy</td>
<td>$4,447</td>
<td>Maria Ines Catalan</td>
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<td>FW00-210</td>
<td>Test Marketing Pasture Produced Artisan Cheeses</td>
<td>$7,910</td>
<td>Tim Pedrozo</td>
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<td>FW00-299</td>
<td>Good Humus Produce Farm to School Project</td>
<td>$5,300</td>
<td>Annie Main</td>
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<td>FW99-073</td>
<td>Converting Dairy Waste into More Usable Products through Vermiculture</td>
<td>$4,300</td>
<td>Charmaine Harris</td>
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</table>
Central Coast Vineyard Team
Positive Points System Evaluation and Education Program

Soil Solarization as a Methyl Bromide Alternative in Strawberries

Solarization for Small Farm “Specialty Crops”

Goats as a Source of Weed and Brush Control in Forest Plantations

Feasibility of Soil Solarization for Strawberry Production on the Central Coast of California

Individual Confinement Rearing vs. Pasture-Based Group Rearing of Dairy Calves

Vermicomposting Demonstration Project

Pheromone Foggers for Pesticide Replacement

Farming, Agriculture, and Resource Management for Sustainability (F.A.R.M.S.)

Monitoring Program for Biologically Integrated Orchard Systems (BIOS) in Walnuts

Hopes of dry land: Managing soils to improve fruit yield and quality in dry farm tomatoes

What is a Healthy Soil for Wine Grape Production? Assessing Soil Health Across California Vineyards

Grazing for change: Connecting soil health and ranch viability using adaptive multi-paddock grazing

Cover crops to enhance control of leaf-footed bug, Leptoglossus zonatus, in California tree nut crops

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**GRADUATE STUDENT GRANTS**

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
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</thead>
</table>
| GW21-224  | Hopes of dry land: Managing soils to improve fruit yield and quality in dry farm tomatoes | $25,243      | Dr. Timothy Bowles  
University of California Berkeley  
Yvonne Socolar  
UC Berkeley |
| GW21-227  | What is a Healthy Soil for Wine Grape Production? Assessing Soil Health Across California Vineyards | $30,000      | Dr. Cristina Lazcano  
University of California Davis  
Dr. Mallika Nocco  
University of California, Davis  
Dr. Kerri Steenwerth  
USDA/University of California Davis  
Noelymar Gonzalez-Maldonado  
University of California Davis |
| GW20-203  | Grazing for change: Connecting soil health and ranch viability using adaptive multi-paddock grazing | $24,867      | Dr. Timothy Bowles  
University of California Berkeley  
Lynn Huntsinger, PhD  
University of California, Berkeley  
Paige Stanley  
University of California, Berkeley  
Paige Stanley  
University of California, Berkeley |
| GW20-207  | Cover crops to enhance control of leaf-footed bug, Leptoglossus zonatus, in California tree nut crops | $24,796      | Dr. Houston Wilson  
University of California, Riverside  
Dr. Kent Duane  
University of California, Berkeley  
Rob Straser  
University of California, Riverside |
GW20-216 Network analysis of organic seed systems: a systems-level analysis for resilience $24,997
Mark Lubell
University of California, Davis
Liza Wood
University of California, Davis
Jared Zystro
Organic Seed Alliance
Liza Wood
University of California, Davis

GW19-191 Systems approaches to co-manage disease, water and soil health for sustainable processing tomato production in the Western region $25,000
Dr. Cassandra Swett
UC Davis
Justine Beaulieu
UC Davis

GW19-193 Conventional vs. regenerative almond orchards, with regards to invertebrate biomass and biodiversity, soil health, food safety, and profitability $25,000
Dr. Jonathan Lundgren, PhD
Ecdysis Foundation
Dr. Patty Oikawa
California State University East Bay
Dr. Erica Wildy
California State University East Bay
Thomas Fenster
University of California, Davis

GW19-194 Sustainable orchard intensification: Cover crops and management intensity $24,944
Bradley Hanson
University of California, Davis
Steven Haring
University of California, Davis

GW19-200 Natural pest control in a working agricultural landscape: Investigating the impact of rodent control on beneficial hawks and owls $24,997
Dr. Joshua Hull
UC Davis
Dr. Sara Kross
Columbia University
Breanna Martinico
UC Davis

GW18-062 Development of New Selection Tools and Crop Varieties for Sustainable Agriculture $24,443
Paul Gepts
University of California - Davis
Travis Parker
University of California - Davis

GW18-020 New Ranchers, New Needs: Why are first-generation ranchers deciding against traditional climate adaptation strategies? $24,982
Leslie Roche
UC Davis
Katherine Munden-Dixon
University of California - Davis

GW18-041 Insect Discovery and Breeding as Tools for Sustainable Solutions to Organic Waste Management $24,942
Dr. Christian Nansen
University of California, Davis
Trevor Fowles
University of California, Davis

GW18-142 Cover Crop Systems for Almond Orchards: Exploring Benefits and Tradeoffs to Inform Management $24,852
William Horwath
University of California, Davis
Cynthia Creze
University of California, Davis

GW18-126 Increasing the sustainability of dairy cattle by providing genetic tools to reduce lameness, improving welfare and production $23,623
Dr. Anita Oberbauer
University of California, Davis
Ellen Lai
University of California, Davis

GW17-032 Management of Fusarium Wilt of Strawberry through Crop Rotation $24,999
Dr. Thomas Gordon
UC Davis Dept. Plant Pathology
Peter Henry
University of California at Davis

GW16-044 A Collaborative Approach to Integrated Pest Management of Tadpole Shrimp in California Rice Fields. $24,928
Larry Godfrey
University of California, Davis
Joanna Bloese
University of California, Davis

GW13-011 Compost-Induced Disease Suppressive Soils for Control of Verticillium Wilt of Strawberry $24,992
Tom Gordon
UC Davis
Margaret Lloyd
UC Davis
<table>
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| GW13-018     | Best management practices that promote sustainable crop pollination: the role of crop rotations and tillage depth | $24,954 | Neal Williams  
University of California, Davis  
Katharina Ullmann  
University of California, Davis |
| GW12-024     | Ecosystem Services in Hedgerow Restorations: Pollination Function and Nesting Habitat | $17,882 | Dr.Claire Kremen  
University of California, Berkeley  
Hillary Sardinas  
UC Berkeley |
| GW11-001     | Pastured Poultry/Crop Systems and Their Effect on Food Safety, Farm Economy, and Soil Quality | $24,807 | Dr.Kathleen Hilimire  
University of California, Santa Cruz  
Stephen R. Gliessman  
University of California |
| GW11-012     | Facilitating Integrated Weed Management in California Rice: Predicting E. spp. and C. difformis emergence across heterogeneous growing environments | $17,120 | Dr.Chris van Kessel  
University of California, Davis  
Dr.Mark Lundy  
University of California Cooperative Extension |
| GW10-010     | Irrigation Alternatives for Sustainable Water Use of Processing Tomatoes | $25,000 | Louise Jackson  
UC Davis  
Felipe Barrios Masias  
Board of Regents, NSHE, obo University of Nevada, Reno |
| GW09-018     | Promoting Native Bumblebees in Agricultural systems for conservation and ecosystem service | $20,074 | Dr.Claire Kremen  
University of California, Berkeley  
Dr.Alexandra Harmon-Threatt  
University of Illinois, Urbana-Champaign |
| GW08-015     | Screening for non-host rotation crops of Colletotrichum acutatum for strawberry nurseries in California | $19,535 | W. Douglas Gubler  
University of California, Davis  
Joseph Jertberg  
UC Davis Plant Pathology Department |
| GW08-018     | Solarization and steam heat combined to control weeds in strawberry | $19,974 | Steve Fennimore  
University of California, Davis  
Celeste Gilbert  
University of California, Davis |
| GW07-003     | Sustainable Landscapes: Investigating the Landscape Scale Effects of Riparian Habitat on Natural Pest Control | $17,950 | Suzanne Langridge  
University of California |
| GW07-006     | Risk, Rate, and Impact of Medusahead Invasion of California Savannas | $19,971 | Dr.Emilio Laca  
UC Davis  
Corey Cherr  
University of California, Davis |
| GW07-012     | Managing Soil Food Webs for Enriched and Suppressive Soils: Effects of Cover Crop Diversity and Quality | $19,235 | Tianna Dupont  
University of California at Davis |
| GW06-004     | Linking C and N Cycling to Microbial Community Function in Cover Crop Systems | $9,995  | Angela Yin Yee Kong  
University of California, Davis |
| GW06-007     | Pest Control Services from Natural Habitat | $9,650  | Rebecca Chaplin  
University of California, Berkeley |
| GW06-016     | Investigating the Effect of Hedgerows to Enhance Natural Biological Control | $10,000 | Tara Pisani Gareau  
University of California, Santa Cruz |
| GW06-017     | Understanding N Fixation by Legume Cover Crops in Organic Vegetable Systems | $10,000 | Carol Shennan  
University of California, Santa Cruz  
Katie Monsen  
University of California Santa Cruz |
<table>
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<th>Project #</th>
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</table>
| GW06-029   | Sheep Grazing as a Tool for Vernal Pool Stewardship                           | $8,813       | J. Hall Cushman  
Sonoma State University  
Joan Schwan  
Sonoma State University |
| GW06-030   | Developing a Management Plan for Reducing Thrips-induced Damage on Timothy Hay | $10,000      | Larry Godfrey  
University of California, Davis  
Daniel Marcum  
University of California  
Domic Reisig  
University of California, Davis |

**ON FARM RESEARCH/PARTNERSHIP GRANTS**

<table>
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| OW20-360   | Solarization and Biosolarization: Harnessing the Sun and Organic Matter to Control Weeds | $49,956      | Martin Guerena  
National Center for Appropriate Technology |
| OW19-339   | Collaboration to demonstrate the potential use and value of electronic identification and DNA testing in the sheep industry | $50,000      | Julie Finzel  
The Regents of the University of California, Agriculture and Natural Resources  
Dr.Alison Van Eenennaam  
UCANR |
| OW19-345   | Effects of Occultation on Weed Pressure, Labor Costs, Product Quality, and Yield in Sustainable Vegetable Production in Northern California | $49,994      | Dave Runsten  
Community Alliance with Family Farmers  
Kali Feiereisel  
Community Alliance With Family Farmers |
| OW19-349   | Amador Rangeland Soil Health Research and Education Project                    | $49,139      | Amanda Watson  
Amador Resource Conservation District |
| OW19-351   | A Collaborative Beneficial Insect and Pheromone Mating Disruption Demonstration Project | $50,000      | Dr.Stephanie Bolton  
Lodi Winegrape Commission |
| OW18-013   | Early Weaning of Beef Calves: A Drought Management Strategy on Annual Rangelands | $41,184      | Dan Macon  
University of California Cooperative Extension |
| OW17-043   | Beginning-farmer Research and Instruction on Growing in High Tunnels           | $49,999      | nathan harkleroad  
ALBA |
| OW17-054   | Advancing sustainable nitrogen management in strawberries through participatory research and education | $49,937      | Sacha Lozano  
Resource Conservation District of Santa Cruz County |
| OW16-013   | Irrigated Pastureland Enhancement Program                                      | $49,774      | Leslie Roche  
UC Davis  
Dan Macon  
UC Cooperative Extension |
| OW14-032   | Selecting and Managing Vineyard Cover Crops to Reduce Consumption of Net Basin Water | $49,467      | Fritz Westover  
Vineyard Team  
Kris Beal  
Vineyard Team |
| OW13-062   | Empowering Socially-Disadvantaged Farmers to Investigate Nitrogen Management in High-Value Vegetable Crops | $45,527      | nathan harkleroad  
ALBA |
| OW12-008   | Water Management in Sonoma County Grape Production                             | $49,200      | Karen Thomas  
Sonoma County Winegrape Commission |
| OW11-318   | Pomo Tribal Supported Agriculture Program                                       | $49,963      | Rachel Whetstone  
Hopland Band of Pomo Indians  
Terri McCartney  
Coordinator |
Total funding from the USDA SARE program to California
$13,166,927

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).