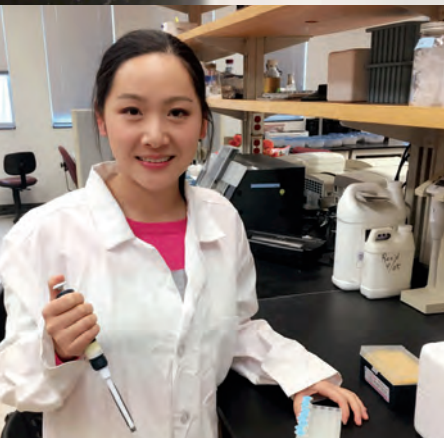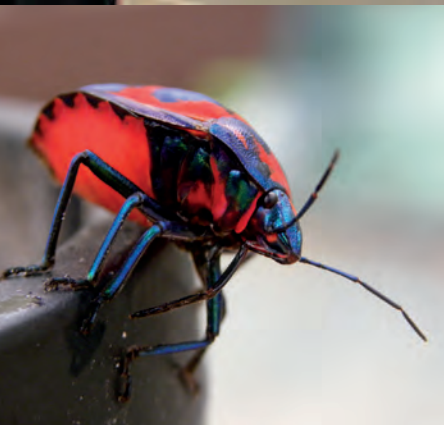Our Farms Our Future Conference
April 3, 2018, Saint Louis Missouri

SUSTAINABILITY IN 180 SECONDS

4 Regions, 11 Graduate Students, 1,980 Seconds

SUSTAINABILITY IN 180 SECONDS

Today's scientists are challenged to not only competently conduct their research, but to effectively explain their work to a broad audience. Our "Sustainability in 180 Seconds" presentations give graduate students an opportunity to do exactly that. Eleven graduate students from our four SARE regions will share information about their SARE project and explain its importance—using one slide, no props, and 180 seconds!

The cornerstone of the SARE program is the idea that sustainable solutions to agricultural challenges arise when scientists, educators, and producers work together. With support from SARE's Graduate Student grant programs, a strong pool of agricultural scientists is rising through the ranks—professionals who know how to conduct collaborative, applied research to address the real-world needs of farmers and ranchers. We hit a major milestone in 2016 when we awarded our 600th Graduate Student grant. Since 2000, the four SARE regions have awarded a total of $7.2 million to 600 graduate students.

To learn more about the projects featured in Sustainability in 180 Seconds, visit https://projects.sare.org, and search by the last name or project number noted in the program.
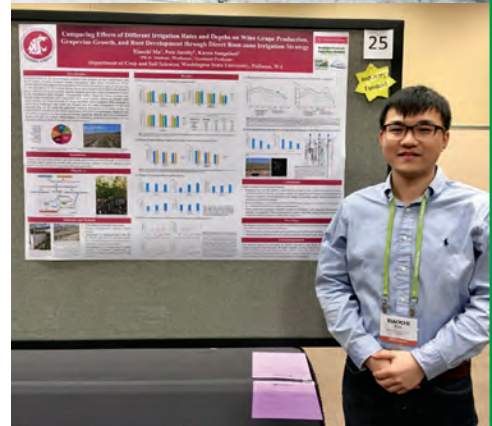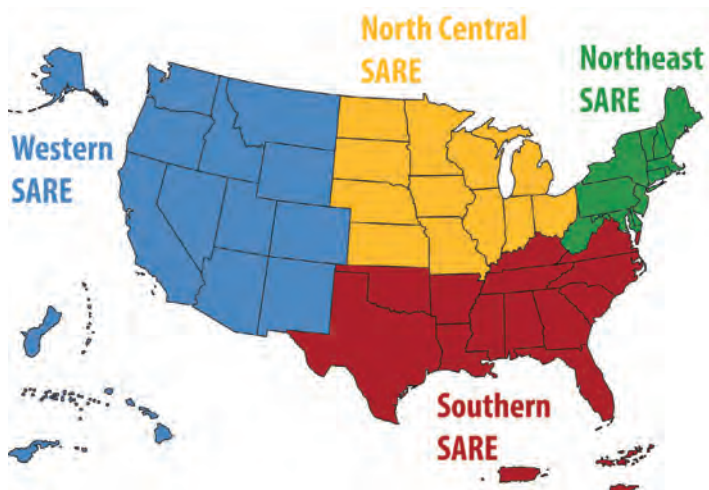
Julie Fine

Julie Fine just earned her Master's Degree from the Stockbridge School of Agriculture at the University of Massachusetts Amherst. Julie works with cover crops, soil health, and sustainable vegetable systems. Multi-species cover crop mixtures are increasingly promoted for their diverse benefits. This research project evaluated cover crop biomass production, nutrient cycling, spring soil temperature, and in-season soil nitrate following forage radish-based cover crop mixtures in a no-till sweet corn system. A mixture of oat and forage radish provided cost-effective synchrony between nitrogen release and sweet corn demand for increased sustainability.

Nikola Kochendoerfer

Nikola (Niko) Kochendoerfer is pursuing a Master's Degree at Cornell University in Animal Science working on milking sheep management and nutrition. For her SARE project, traditional meat sheep are being milked in short and frequent lactations on the STAR accelerated lambing system utilizing their out of season breeding ability and high peak milk yields to evaluate the feasibility of year-round sheep dairying. She will assess ideal management and nutrition strategies to generate high quality milk and lamb crop year-round while maintaining optimal health and condition of the ewes. Farmers may use this novel management approach to market milk and meat throughout the year to increase their profitability.

Muhammed Shafeekh Muyyarikkandy

Muhammed Shafeekh Muyyarikkandy is a Ph.D. candidate in Animal Science at the University of Connecticut conducting researching on the efficacy of probiotics to both control foodborne pathogens and promote growth in poultry. The objective of the study is to promote growth, health, and performance in broiler chickens through the early administration of probiotics on embryonated eggs starting the day of incubation itself. Results will inform methods to provide an economical, safe, and practical alternative to antibiotic growth promoters in the poultry industry.

GNE14-080
Integrating No-till and Forage Radish Cover Crops for Sustainable Early Sweet Corn Production

GNE16-123
Sustainable Year-Round Sheep Milking Management

GNE16-128
Early (in-ovo) Administration of Probiotics to Promote Growth in Broiler Chicken

Xiaochi Ma

Xiaochi Ma is a Ph.D. candidate in Crop Science at Washington State University, focusing on physiological processes of grapevine under water stress and efficiency of deficit irrigation on grape production and water management. This project is trying to achieve comprehensive understanding of subsurface micro-irrigation impacts on grapevine growth and wine grape quality by determining optimal irrigation depth and minimal amounts of water required to improve water use efficiency. Growers will be directly engaged with this project through planned program activities to translate research-based findings to provide efficient and sustainable irrigation methods for vineyard managers to utilize during periods of limited water availability.

Hannah Rivedal

Hannah Rivedal is a Ph.D. candidate from Oregon State University studying plant pathology. Her research focuses on diagnosing a soilborne fungal disease complex of winter squash in order to understand and effectively manage the disease. Winter squash is grown in Oregon's Willamette Valley for edible seed, processing, and fresh market; however, an unknown soilborne disease is reducing squash yield and quality. Her research seeks to sustain winter squash and confectionary seed production through diagnosis of the causal agents of the disease, identification of resistant cultivars, and evaluation of cultural management strategies. Hannah plans to continue to work with growers after graduating to develop practical, sustainable, integrated disease management strategies in vegetable production systems.

Casey Spackman

Casey Spackman grew up on a farm along the Utah-Idaho border where he developed a passion for agriculture. He is currently pursuing a Ph.D. in Rangeland Science at Utah State University, and works for and collaborates with the USDA-ARS-Poisonous Plants Research Laboratory. With this project, he is exploring control tools to mitigate the invasive annual grass Medusahead Rye by manipulating livestock grazing behavior. He is currently exploring how to use herbicide, grazing, and revegetation as an integrated approach to make rangelands more sustainable for producers.

GW17-058
Effects of Subsurface Micro-irrigation on Water Use Efficiency and Grapevine Growth

SW15-021
Diagnosis and Management of a New Disease of Cucurbits in Oregon

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 U.S.

Moriah Bilenky

Moriah Bilenky is originally from Pennsylvania and is currently attending Iowa State University pursuing a Master's Degree in Horticulture. After graduating with her B.S. in 2013, Moriah spent three years working in management roles on diversified vegetable farms. Her project is investigating the impact of integrated production on crop and animal growth, soil health, and economic feasibility. The project will test three different integrated vegetable-poultry crop rotation systems: two will be poultry-vegetable-cover crop rotation systems and one will be a traditional vegetable-cover crop rotation.

Waana Kaluwasha

Waana Kaluwasha is pursing a Master's Degree at the University of Missouri in the Division of Plant Sciences. She learned about farming in her home country of Zambia, and decided to pursue a career in plant sciences, in order to respond to the multiple agricultural challenges that farmers face. With her project, she worked to develop a strategy of using cover crops to enhance soil and plant health and weed suppression in organic sweet potato production. She found that tilling the cover crops into the soil as green manure before transplanting sweet potato slips resulted in the least amount of weeds, healthier sweet potato plants, and ultimately 1.5 to 2.4-times marketable tuber yield compared to plots without cover crops.

Andrea Rissing

Andrea Rissing is a Ph.D. candidate in Cultural Anthropology at Emory University in Atlanta, Georgia. Her dissertation work investigates beginning farmers' economic strategies and the contact points between different types of agriculture in Iowa. This comparative project sought to understand the factors that can precipitate a new farmer's decision to leave agriculture. Using semi-structured interviews with beginning farmers and people who had decided to stop farming within five years in Iowa, this project found that a farm's likelihood of "making it" cannot be reduced to finances alone. Rather, success depends upon many social and economic factors, including access to mentorship, relationships with other growers, family ties in agriculture, and personal satisfaction.

GNC17-236
Integration of Poultry and Cover Crops for Soil Health in Vegetable Production

GNC16-226
Effect of Cover and Green Manure Crops on Soil Health, Plant Health and Tuber Yield in Organic Sweet Potato Production

GNC15-208
Why Do They Quit? Identifying Key Determinants of Beginning Farmers' Decisions

Anthony Stephen Dimeglio

Anthony (Tony) Dimeglio is a Master's Degree student at Virginia Tech, where he is researching and developing sustainable agricultural technologies to advance human nutrition and community well-being. With this project, he is developing a trap-and-kill device for managing harlequin bug populations. These bugs are notorious pests of brassica crops such as broccoli, kale, collards, and mustard. His work highlights a technology that can be used to control harlequin bug populations without incorporating insecticidal materials into food crops. He hopes this work will one day lead to a method that interrupts aggregation pheromone production, which therefore, in theory, could increase harlequin bug attraction to a pheromone baited trap or trap crop.

GS15-144
Improved Trapping Strategies for Managing Harlequin Bug: Applying Recent Research and Discovery of its Aggregation Pheromone as a Tool for Vegetable Growers

Qi Zhou

Qi Zhou is a Ph.D. candidate at Clemson University, majoring in Plant and Environmental Science. She has been doing peach research for four years with Dr. Melgar at Clemson. Her passion has always been assisting farmers to improve their profitability and improve the agriculture sustainability. The goal of her project is to study the nutrient requirements for peach trees from different ripening seasons. Results from this research may cast light on how to improve peach orchard fertilization, especially in the Southeast.

GS17-174
Optimizing Nutritional Management in Fruit Tree Production in Southern U.S.

About SARE's Graduate Student Grant Program

SARE is a USDA-funded program that offers grants and educational opportunities to farmers, ranchers, researchers and educators to advance sustainable innovations in agriculture. In 2000, Southern SARE initiated a Graduate Student grant programs as an investment in the next generation of sustainable agriculture leaders. The other SARE regions soon followed—all seeing the value in such a training opportunity for the future of agriculture. Since 2000, the four SARE regions have awarded a total of $7.2 million to 600 graduate students.
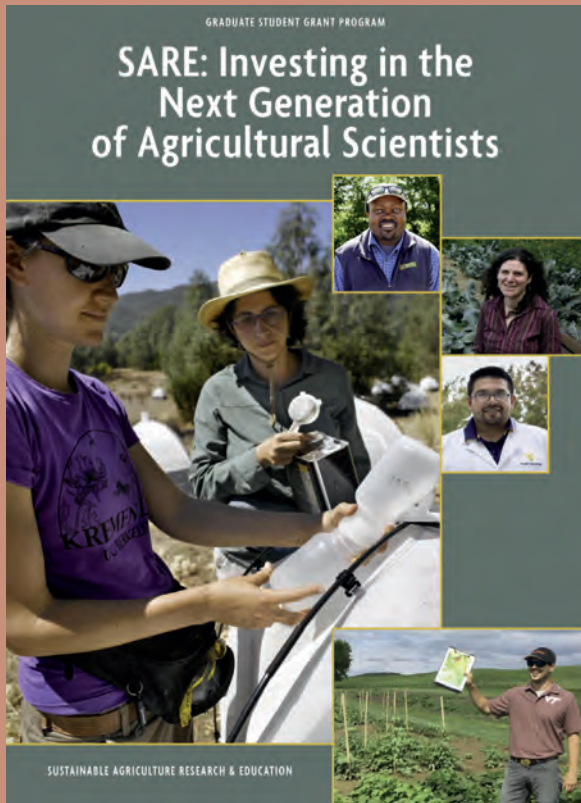
The goal of the program is the same in each SARE region, but the application criteria and awards can vary. Students are required to work with a faculty advisor. Depending on the region, grant amounts range from $11,000 to $25,000 with a maximum project duration of two or three years.

SOUTHERN SARE, 3:30-3:45PM

Learn More!

Investing in the Next Generation of Agricultural Scientists is the premier resource about SARE-supported graduate student research.

"In this report, you will learn about the considerable impact of this investment on both the students and sustainable agriculture through the stories of eight grant recipients. This impact is a clear reflection of the program's primary objective, which is to foster the next generation of agricultural scientists and their interest in sustainable systems."
- Rob Hedberg, SARE Director, 2016

Find it online at www.sare.org/Learning-Center/SARE-Program-Materials/National-Program-Materials/Investing-in-the-Next-Generation-of-Agricultural-Scientists

Ref: 7652.00

OUR FARMS, OUR FUTURE

THE NEXT 30 YEARS OF SUSTAINABLE AGRICULTURE