

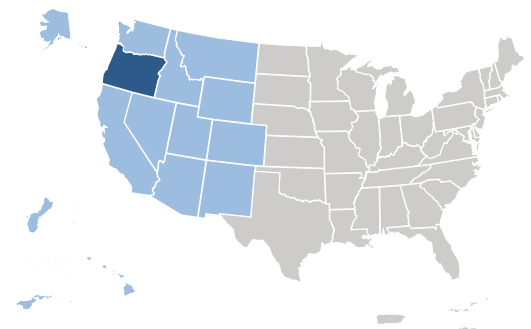


Redefining Learner-centered Education to Build High Impact IPM Partnerships



Farmers sharing their innovative practices with others is a powerful way to support peer-to-peer learning and discovery. Credit: Berit Dinsdale

This outcome-based, interactive approach to curriculum design strengthened extension faculty pedagogy, increased producer engagement, and shifted pesticide application practices to protect water quality and reduce pesticide resistance.



THE SUCCESS STORY

Extension professionals are often experts in their fields, but poor curriculum design and ineffective learner engagement pose challenges to maximizing the impacts of their programs. Principal Investigator Mary Halbleib successfully piloted a template-based educational framework that positions diverse producers to be self-directed learners and drives practice changes that enhance environmental sustainability.

Region: Western
State: Oregon
Grant Type: Professional Development Program
Grant: [EW16-010](#)

SARE POST-PROJECT EVALUATION IMPACT MODEL

HIGHLIGHTS			SUSTAINABILITY IMPACTS	
Grantee (AG Professional)	Train the Trainer PDP PARTICIPANT (Extension Faculty)	Sustainable Agriculture PDP PARTICIPANT (Producer)	✓	○
<ul style="list-style-type: none"> ✓ Increased knowledge/skills ✓ Increased capacity/motivation ✓ Practice change 	<ul style="list-style-type: none"> ✓ Increased knowledge/skills ✓ Increased capacity/motivation ✓ Practice change ○ Increased engagement 	<ul style="list-style-type: none"> ✓ Increased knowledge/skills ○ Increased capacity/motivation ✓ Practice change ✓ Increased engagement 	<ul style="list-style-type: none"> ✓ Environmental Sustainability Impacts ○ Economic Sustainability Impacts ○ Production Efficiency Impacts ○ Social Sustainability Impacts 	<ul style="list-style-type: none"> ✓ = Project-Specific Areas of Success



Mary Halbleib, Oregon State University Professor of Practice. Credit: Oregon State University

GRANTEE (PRINCIPAL INVESTIGATOR) HIGHLIGHTS

At the time of this grant, Halbleib was a mid-career academic who had recently shifted to developing a capacity-building program to empower extension faculty to co-create learning partnerships with communities. She gained knowledge of the importance of intentional and collaborative partner engagement, which she applied to a subsequent extension faculty professional development training grant. Halbleib evolved her grant management practice by crafting a clearly articulated announcement and survey-based application process for interested agricultural educators, and once cohort members were selected, established a formal written agreement outlining collaboration expectations and conditions for them to receive funding. According to Halbleib, “these were powerful tools to build trust and transparent sharing about challenges.” Halbleib also refined her current program implementation approach by involving paid producers to serve as co-educators with extension faculty and other agricultural educators. With an expanded collaborative network she attributes to SARE grants, she has carried her work forward to international contexts. The funding also helped Halbleib further her engaged scholarship. She has produced numerous publications to disseminate learning generated through her projects, which contributed substantially to her achieving Professor of Practice in the Crop and Soil Science Department at Oregon State University in 2022.

USING NEW FORMS OF ENGAGEMENT

“The ALCE approach is very helpful for engaging adult learners. To be honest, I wasn’t sure how the growers would respond to a consultation process based on ALCE since I knew it was going to take them out of their comfort zone. I thought it might take too long to familiarize the growers with the process. But once it was up and running, they engaged and were contributing ideas and discussion. The high level of grower involvement was a real surprise! The growers were able to come together in agreement on several future outcomes they identified as important for their industry. Equally as important, the outcomes developed by the growers will provide critical guidance for developing future outreach programs that are in sync with stakeholder priorities.”

— Darrin Walenta, Project Leader

TRAIN THE TRAINER PDP PARTICIPANT (AGRICULTURE EDUCATORS) HIGHLIGHTS

Extension professionals received training and an Adaptive Learner-Centered Education toolkit with two program design templates for a variety of in-person and virtual workshop formats. The Outcome-Based Extension Education Design Template provides a cohesive program structure that supports instructional design focused on learning outcomes to meet the real-world needs of learners. The Facilitating Teaching and Learning Template supports determining the best use of program time and maximizes learner engagement. This publication reports three case examples in which extension professionals applied adult learning best practices to: 1) Develop the program by envisioning its desired outcomes in consultation with stakeholders / producers; 2) Design decision-support tools that integrate the necessary data for producers to make informed, sustainable choices, and; 3) Create learning experiences focused on the specific audience and their needs. In evaluation surveys, extension professionals reported increased confidence in using the toolkit and applying evidence-based adult learning practices. They also increased ongoing engagement by facilitating a monthly gathering to discuss and provide training on adult education topics and through conference presentations and collaboration on articles.



Adaptive Learner-Centered Education



Figure 1. The six steps of Adaptive Learner-Centered Education are divided into three stages: Develop, Design, and Learn. Each step informs the one that follows. The evaluation at the end of the process provides feedback for improving the next round of program development. Credit: Oregon State University

SUSTAINABLE AGRICULTURE PDP PARTICIPANT (PRODUCERS) HIGHLIGHTS

In the context of the trainings, pesticide users stepped up as co-creators by identifying targeted outcomes, action categories, and education priorities. After the training, the decision-support tools were developed to meet their stated needs (e.g., pesticide use and fact sheets specific to their locations and production calendars). These locally-relevant resources enabled producers and other pesticide users to adjust their pesticide application practices to increase water quality protection, reduce the risk of pesticide resistance, and diversify on-farm habitat for enhancing and sustaining beneficial insect populations.

SUSTAINABILITY IMPACTS

Known environmental sustainability impacts resulting from producers' integrated pest management practices include reduced harm to watersheds by lowering thermal, wind, and inversion drift and runoff and reduced risk of pesticide resistance through increased chemistry rotation. Reduced pesticide resistance may decrease crop loss and contribute to production efficiencies, although these impacts were not assessed in the context of Halbleib's PDP grant.

ADAPTING PEST MANAGEMENT PRACTICES

“ You want to know how much of an impact [the Middle Rogue PSP Partnership] had on me, and I'm saying, I do think about it. I think about 'Well let's see, do I want to buy that product? Seems like that was the number one thing in the water.' I wouldn't say that I would never use it, but I'd be less inclined, and if I did, I would probably be a little more careful the closer I got to our waterways.”

— Farmer participant in the Middle Rogue Pesticide Stewardship Partnership

THE IMPACT OF SARE

“ So much came out of this SARE grant; it’s amazing. I was on a trajectory, and the project allowed me to increase the approaches I use to support faculty-led partnerships across Oregon. As a result, I implemented a more intentional process, tested out the ideas in diverse places, and saw how those inside and outside of OSU adapted the methods to meet the needs of their communities. It accelerated my learning and scholarship.”

— Mary Halbleib, OSU Professor of Practice and SARE Professional Development Program grantee

BARRIERS

Halbleib originally planned to partner with a co-investigator on her SARE grant but this person was unable to continue working on the project. She also lost a subset of extension faculty collaborators who elected to contribute during the grant application process but did not have the capacity to contribute once funding was received.

CONTRIBUTORS

With support from SARE, Halbleib was able to “rebirth” the grant as a sole investigator with a subset of collaborators committed to the project and willing to test an innovative, learner-driven approach. Although these challenges delayed project completion, Halbleib acquired substantial knowledge about grant seeking, leading collaborative projects, and disseminating learning.



Farmers and other experts sharing knowledge on how to enhance on-farm habitat for beneficial organisms. Credit: Oregon State University



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