



Extension Has Big Plans for 2016!

COUNTY APPROVES SITE FOR EXTENSION EDUCATION CENTER

In November, 2015, the Clackamas County Board of Commissioners unanimously approved the designation of an acre and a half parcel of the Red Soils campus in Oregon City for the construction of a new Extension Education Center. The “Wetlands” site was one of two locations the Commissioners asked the Extension Service to consider in their building concept planning. The Wetlands location is at the southeast corner of the Warner Milne and Beaver Creek Road intersection.



Mike Bondi, Extension Regional Administrator

“This will be a wonderful opportunity for Extension to build a state-of-the-art education center to better serve our citizens,” said Clackamas County Commissioner, Martha Schrader. “Extension has needed a more adequate facility for a long-time to grow their programs.” Schrader made the motion to bring the decision to the Commissioners for their vote.

Concept planning for a new Extension building began in the winter of 2014-15. Extension’s citizen advisory council took

the lead on moving the project forward. Irwin Rogers, Molalla, member of the advisory council and Chair of the Extension Education Center Building Committee, “Our big task was finding an architectural firm that was a right fit for our project.”

Opsis Architecture LLC in Portland was awarded the design contract for the project. By May 2015, the firm began working closely with Extension staff, advisory members, and the community to develop concepts for the Center and the key elements to be included. Initial meetings with the County Commissioners began in September with discussions leading to their approval.

“We still have a long way to go,” said Mike Bondi, OSU Extension’s Regional Administrator for Clackamas County. We are working on a memorandum of understanding between Extension and the County detailing who will be doing what on the project. The Clackamas Extension and 4-H Service District will be funding the construction costs for the Center from their budget and reserves.

“Our goal is to get refined design documents this spring; then, develop all of the engineering specifications and get per-

mitting ready to go. We hope to break ground by 2017.”



Architect’s proposed design for the new Clackamas Extension Education Center at the County Red Soils Campus. Besides offices and the public Master Gardener Clinic, meeting rooms, conference space, a demonstration and teaching kitchen, and outdoor learning spaces will be included.

HOW TO REACH US

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2016 CALENDAR OF EVENTS—WHERE YOU WILL FIND EXTENSION AT WORK

March 9:

Winter Vegetable Variety Field Day. North Willamette Research and Extension Center (1:00-4:00pm). Forty varieties of overwintering vegetables were planted at NWREC at four different planting dates last fall. Results will be shared at an afternoon field tour and discussion with farmers, Extension faculty, and seed companies.

March 14:

CROPTIME Farmer Training. North Willamette Research and Extension Center (10:00am-2:30pm). Learn about degree-day models and the research they are based on. Learn how to use CROPTIME to schedule vegetable plantings, predict harvest dates and improve weed and nitrogen management on the farm. Registration required. See NWREC website.

March 19:

Clackamas Tree School. Clackamas Community College, Oregon City (8:00am-5:15pm). Largest annual educational event for family forest owners in the U.S. with 600 attendees. Registration closed this year with a full house after only 2 ½ weeks. Contact the Extension office in Oregon City to be placed on the mailing list for next year's event.

March 23-25:

Youth Farm Tractor Safety Training and Certification. North Willamette Research and Extension Center (8:30am-4:30pm each day). National certification training for youth 14-17 to prepare them for working on farms. Classroom and field training including mechanics of tractors, safety basics, driving, backing, pulling trailers, and hooking three-point hitch implements. Registration required. Contact Clackamas County Extension 4-H program in Oregon City for information.

April 30-May 1:

Clackamas Spring Garden Fair. Clackamas County Event Center (9:00am-5:00pm each day). Where everyone goes to get their yards and gardens ready for summer! More than 200 nurseries and garden product vendors showcase their products for sale. Clackamas Master Gardeners organize this event each year attended by 8,000-12,000 people.

July 9-15:

Clackamas Horse 4-H Fair. Clackamas County Event Center (8:00am-5:00pm each day). Nearly 300 youth will participate in this year's Fair—held separately from County Fair since there isn't enough room for all activities at the same time.

July 9:

Clackamas Dog 4-H Fair. Clackamas County Event Center (8:00am-5:00pm). Fifty youth will participate, show their dogs, be involved in contests and judging.

July 9-14:

Clackamas Horse 4-H Fair. Clackamas County Event Center (8:00am-5:00pm, each day). Nearly 300 youth will participate, show their horses, be involved in contests and judging.

July 14:

Crop-Up Dinner. North Willamette Research and Extension Center (5:00-8:00pm). The public is invited to a celebration of Oregon agriculture sponsored by OSU's Food Innovation Center in Portland. Enjoy a farmer's market before a wonderful farm-to-plate dinner showcasing the bounty of agriculture here in the north valley. To register, watch for details on the NWREC website at <http://oregonstate.edu/dept/NWREC>.

July 18-23:

Clackamas 4-H Summer Camp. 4-H Center, Salem. Overnight camping experience open to any youth ages 9-13. Lots of fun and educational activities. Registration required. Contact Extension office in Oregon City.

July 27:

NWREC Community Open House. North Willamette Research and Extension Center (4:00-7:00pm). Free event for the entire family. Learn about the Center and the work we do. Berry tasting. Farm fresh vegetables available. Fun activities for the kids. Hay wagon rides tour the farm. Tractor driving, too.

August 16-21:

Clackamas County Fair and Rodeo. Clackamas County Event Center (gates open at 10:00am daily). There's nothing like it—considered the BEST FAIR in the state! Lots of great 4-H projects, activities, demonstrations, displays, and judging. Don't miss it.

September 15:

Clackamas Small Farms School. Clackamas Community College, Oregon City (8:00am-5:00pm). Join over 200 small family farmers and wanna-bees learning best practices in 25 classes on a wide variety of classes.

November 30-December 2:

National Women in Sustainable Agriculture Conference. Double Tree Hilton, Portland, OR. Registration details coming in June. See website for more information at: <http://2016wisa.org>.

OSU SERVING YOU IN CLACKAMAS COUNTY

Faculty and Staff Located at the Clackamas County Extension Office, Oregon City. Phone: 503-655-8631

Mike Bondi Regional Administrator
 Roxie Applebee Office Manager
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 Kelly Redwine Office Specialist - 4-H & Youth
 Sally Yackley Office Specialist - Tree School & Accounting Assistant
 Katlyn Axmaker Office Specialist - Family & Community Health
 Cheryl Keithan Office Specialist - Part Time (Special Projects, Backup Clerical)
 Wendy Hein Extension Faculty/4-H Youth Club Program
 Jan Williams Extension Faculty/4-H Youth Club Program
 Janet Nagele Extension Faculty/4-H Youth School Enrichment Program
 Lauren Ettlin Program Assistant/4-H Youth School Enrichment Program
 Trisha White Program Assistant/4-H Youth Club Program
 Weston Miller Extension Faculty/Metro Community and Urban Horticulture
 Jordis Yost Coordinator/Metro Master Gardener Program
 Margaret Bayne Home Horticulture Administrative Program Specialist
 Jen Aron BUFA Educational Program Assistant/Home Horticulture
 Kelly Streit Extension Faculty/Family and Community Health
 Beret Halverson Extension Faculty/Family and Community Health
 Erin Devlin Research Assistant/Family and Community Health
 Stephanie Stuart Program Assistant/Oregon Food and Nutrition Program
 Elena Illescas Program Assistant/Oregon Food and Nutrition Program
 Glenn Ahrens Extension Faculty/Forestry and Natural Resources
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 Jen Gorski Program Assistant/Forestry and Natural Resources
 Gene Pirelli Extension Faculty/Livestock and Pasture, Polk County Extension Office, Dallas
 Sam Chan Metro Extension Agent/Watershed Health, Sea Grant, OSU, Corvallis

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 Geoff Lewis Building Trades Maintenance
 Derek Wells Farm and Facilities Management - Assistant
 Robin Rosetta Extension Faculty/Nursery - Integrated Pest Management
 Luisa Santamaria Extension Faculty/Nursery Pathology and Bilingual Educator
 Gilberto Uribe Program Assistant/Nursery Pathology and Bilingual Education
 Chal Landgren Extension Specialist/Christmas Trees
 Judy Kowalski Bio Science Research Technician/Nursery, Christmas Trees and Pesticide Registrations
 Nick Andrews Extension Faculty/Metro Small Farms
 Heidi Noordijk Program Assistant/Metro Small Farms
 Joe DeFrancesco Senior Research Faculty/Specialty Crop Pesticide Registrations
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 Amanda Vance Research Assistant/Berry Crops
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FAMILY AND COMMUNITY HEALTH

SNAP-Ed Reaches Out to Hispanic Community

The Hispanic community in Clackamas County makes up about 12% of the population. Some schools report that as many as 1/3 or more of their students categorize themselves as Hispanic. Often their parents speak Spanish in the home.

To better serve this population, the Clackamas County SNAP-Ed (Supplemental Nutrition Assistance Program—Education) Unit delivers basic food and nutrition lessons in the classrooms of both English and Spanish-speaking youth. The lessons are delivered by Education Program Assistants using curricula approved by the federal Food & Nutrition Services Department.

Topics covered in the lessons include a basic overview of the food groups and how to combine them for good health, the development of healthy eating habits, and an introduction to foods that youth may not be accustomed to eating.

In July 2015 the Clackamas County SNAP-Ed Unit delivered four series of the “Kids in the Kitchen” program to a total of eighty 2nd to 5th grade youth enrolled in the Molalla River School District Summer School program. More than 90% of the youth were Hispanic. The program was delivered in English and all materials and recipes sent home were printed in both English and Spanish.

“When kids are involved in cooking, they are more likely to choose healthy foods and practice good eating habits,” said Elena Illescas. Illescas is a bilingual Education Program Assistant who teaches in both English and Spanish. She notices the change in knowledge and habits of kids who participate in the program. They demonstrate better abilities to choose a variety of food groups and prepare a meal. She sees parents who come in to ask questions and learn alongside their kids.

“Kids in the Kitchen” was well received by the youth participating in the program. They learned how to follow a recipe and had many opportunities to practice basic cooking skills—which they reported was their favorite part of the program. Also, they reported that they were cooking the meals at home and using the incentives received in the class—including chopping boards, measuring cups, and recipes. Finally, the youth actively participated in a physical activity/game component of the program—combining good nutrition with physical activity as a way of promoting healthy living.

GROW Healthy Kids & Communities

USDA Grant Wraps up Third and Final Year.

Extension’s Family and Community Health (FCH) staff have been working closely with community partners in Molalla and Estacada for the past three years to address youth nutrition and health challenges. A special project—called GROW Healthy Kids and Communities—is funded through a grant provided by the US Department of Agriculture.

In 2015 staff and volunteers worked together to raise awareness about the need for children and families to develop and sustain healthy eating and exercise habits.

Community volunteers participated in GROW assessments of the environment in both rural areas. In the schools, teachers and principals helped Extension staff to measure children’s height and weight and physical activity levels during the school day. The school food and physical activity environment was also assessed.

As a result of this research both school districts implemented farm to school, gardening and nutrition curricula. Physical activity breaks were added in classrooms, improved indoor and outdoor play spaces were added with new equipment and trails, and wellness committees were set up to improve policies around physical activity time and healthy eating during the school day. “StoryWalks” were developed to make existing community-based park areas more attractive to families for exercise. Finally, refrigeration and signage were added to local food banks to make fresh produce more accessible to low-income residents.

In 2015 the GROW program reached approximately 1,078 community members in person and 2,939 via social media. Strong community partnerships, and volunteers have been a key influencing factor in raising community awareness about the need for more resources for healthy eating and phys-



Molino Elementary School activities include a series of story walk sign boards around the school's playground (above) and food sampling and tasting events in the cafeteria.



ical activity in the rural area of the Clackamas County. In total, volunteers contributed over 108 hours.

Molalla Superintendent, Tony Mann; Molalla Elementary School Principal, Donna Carlson; and Molino Elementary School Counselor, Shilo Wittrock-Laccino, were recognized for their strong commitment to children’s health in the community of Molalla at a ceremony at OSU in Corvallis last December.

“We hope if kids eat healthy at

school, they’ll eat healthy at home, and it will inspire them to eat healthy wherever they go,” says former Molalla Elementary School Principal, Donna Carlson, “The OSU Extension GROW Healthy Kids and Communities project has really made a difference in our community.”

To learn more about the GROW project in Molalla see a fun video at: <https://www.youtube.com/watch?v=pjg8u9yF2yA>.

FAMILY AND COMMUNITY HEALTH

Family Food Education (FFE) Volunteer Program Going Strong!

In 2015, twenty-six Family Food Educator (FFE) volunteers delivered over 1250 hours of community service throughout Clackamas County, reaching over 6000 citizens. Volunteer efforts greatly increase the OSU Extension Service's capacity to provide research-based education and outreach to the public in a variety of settings, including:

Venue	Total Number of Events	Total Number of Contacts
Farmer's Markets (3)	11	1330
Food Pantries (2)	6	244
Food Preservation/Safety Classes	19	249
Public Events	8	4186

Topic areas included food preservation and safety, nutrition education, meal planning on a budget, shopping, food preparation, and food security. All efforts were directed at promoting healthy individuals, homes, and communities.

2015 FFE VOLUNTEER PROGRAM HIGHLIGHTS:

FOOD PRESERVATION/SAFETY CLASSES: Topics included canning and jammin', pressure canning and pressure cooking, food drying, fermenting, pickling, and salsa making. Long-term food and water storage emerged as a "new" topic in response to an increased interest in emergency preparedness. Tuna canning was offered for the second year in a row. Participants reported an increase in knowledge and skills following completion of these classes.

FARMERS' MARKETS: Demo-tastings and information booths were delivered and staffed at the Oregon City, Milwaukie, and Sunnyside Farmers' Markets. At Oregon City, kids produced their own apple cider using an old-fashioned cider press. Sunnyside Farmers' Market shoppers learned to mix-up a batch of berry freezer jam.

NWREC COMMUNITY OPEN HOUSE: "It takes a village" to organize the FFE Program information booth for this annual event. FFE volunteers contributed stellar organization and coordination efforts and mass produced fruit leather samples. Most, if not all, of the 400 attendees stopped by the booth to sample fruit leather and/or ask food preservation questions.

FOOD PANTRIES: FFE volunteers engaged with pantry volunteers and clients at two food pantry sites: Foothills Resource Center located in Molalla, and the Sandy Community Action Center. Volunteers conducted Healthy Pantry Assessments, facilitated "train-the-trainer" workshops and delivered demo/tastings, as part of the Healthy Pantry Initiative, promoting economical, seasonal, and locally available foods.

But, that was not all. In addition to the events listed above, several of the volunteers delivered customized events out in their rural communities. Yes, we have come a long way! Stay tuned for future activities in 2016.

If you'd like to get involved as a Family Food Educator volunteer in your community, contact Kelly Streit, OSU Community Nutrition Educator, at kelly.streit@oregonstate.edu.

Producing Farm-Direct, Value-Added Foods for Sale — SAFELY!

Kelly Streit is a Registered Dietitian working as a faculty member in the Family and Community Health Extension program in Clackamas County. Streit's position changed focus in 2015 to include working with a broader group of community food systems issues, including educating small farmers on the guidelines, interpretation, and application of two "cottage" food laws; the Farm-Direct, Value-Added law (effective January 2012), and the Bakery Law, which went into effect on January 1, 2016. These laws exempt small producers from having to purchase domestic kitchen licenses in order to produce their products for sale.

"The passage of these laws reflects a growing interest among small farmers and/or food entrepreneurs to produce and sell value-added food products in farm-direct venues, including farmers' markets. It has also prompted the need for education and training for individuals who are considering producing these products," says Streit. "What products qualify for the exemption and which ones don't? What food preservation and food safety practices from the field to the marketplace need to be followed to ensure that the products being produced are safe to eat?"

As a first step, Streit co-authored, *Farm Direct, Value Added*—a resource guide for making and selling food in Oregon during 2015. The publication is designed for small farmers who want to make and sell products either directly to consumers under Oregon's Farm Direct exemption or to restaurants, retailers or distributors and others not allowed under the exemption. Educational trainings and classes for farmers and food producers will be a next step.

Another big part of Streit's job with Extension is coordinating the OSU's Family Food Education program in Clackamas County, and training community volunteers to deliver food preservation and safety classes out in the community. "All of this fits together. I am involved in the growing, harvesting, handling, processing, and preservation of the food, as well as the eating and enjoying of it. At all levels, it's about quality food, nutrition and safety."



COMMUNITY AND URBAN HORTICULTURE

Oregon IPM Website To Take Shape in 2015

A much anticipated Oregon Integrated Pest Management (IPM) Website began development this past year. The site is being designed for home gardeners, the general public and landscape professionals and will be used extensively as a science-based resource by OSU Master Gardener volunteers.

The site is being developed by Weston Miller, OSU Metro Community and Urban Horticulture Extension Agent. Leadership for OSU's Master Gardener program in the metro area is one of his main areas of responsibility. Miller has over 600 Master Gardeners serving in the tri-county metro area.

"The IPM website has been a dream of mine for several years. We have a lot of great science-based information about pest management at OSU, but it's not always easily accessible—especially by the public or our volunteers. The IPM website will be a big step forward for our materials into an up-to-date electronic plat-

form that can be easily accessed from a desktop, laptop or mobile device. We plan to have a very intuitive design and use lots of pictures."

Several key community partners—who especially see the value in Miller's concept—have come together over the past two years to provide guidance for the project. Included are: Metro, Oregon Department of Environmental Quality, Soil and Water Conservation Districts in East Multnomah, West Multnomah and Clackamas, Cities of Portland and Gresham, Association of Clean Wa-



ter Agencies, Salmon Safe, Beyond Toxics, Oregon Tilth, and Oregon Master Gardener Association.

These groups form an advisory committee working with Miller on the project and have committed to raising more than \$225,000 over the next three years for the effort.

"This is no small project," said Miller. "We are building something, totally, from the ground up.

There isn't anything quite like it in the country. Once we get everything we will need and want into the system, I would guess we will spend at least

\$750,000 to make this all happen and to maintain it." Miller says this is a 10 year project.

"We have about three years of development time now planned. Then, we will be maintaining the system and the technology plus adding new content in an ongoing basis to keep us up-to-date."

Besides diagnostic features for identifying disease, insect, weed and environmental problems home landscapes, extensive control options will be provided stressing the integrated plant science approach—including a lay-friendly pesticide risk tool.

"We want people to begin by knowing exactly what their problem is—then explore all of the possible control options from cultural to biological and chemical options to best fit their needs." Miller hopes to have the first prototype sections for the website ready for public release by late summer, 2017.

Master Gardeners Make Huge Community Contribution

IF YOU'VE EVER THOUGHT THE OSU MASTER GARDENERS ARE EVERYWHERE—THEY PRETTY MUCH ARE!

What started right here in Clackamas County in 1978, has become a movement that has now spread all over the state. Master Gardeners are trained volunteers of the Oregon State University Extension Service. They are gardening experts who have received extensive training. They serve the public through a wide variety of community outreach activities—sharing their knowledge and helping solve homeowner questions and needs for information. Here's a sample of what your Clackamas Master Gardeners (MGs) accomplished in 2015.

- 20,225 individual contacts made by MGs in Clackamas County
- 9509 hours volunteered by 182 Clackamas MGs
- 3295 pounds of produce provided in the *Grow an Extra Row* program in Clackamas County
- 113 pounds of produce provided from the End of the Oregon Trail Interpretive Center Garden
- 1876 clients assisted via the phone at the public MG Clinic in the Extension office, Oregon City
- 8062 attended the *Annual Spring Garden Fair* at the Clackamas County Event Center, Canby

- 555 clients assisted at the End of the Oregon Trail Pioneer Garden outreach site, Oregon City
- 597 clients assisted at the Lake Oswego Farmers Market
- 617 clients assisted at the Milwaukie Farmers Market
- 644 clients assisted at the Oregon City Farmers Market
- 265 clients assisted at the Clackamas County Fair MG Clinic, Canby
- 630 attendees at Milwaukie Center's *Fall Into Gardening Clinic*
- 1164 attendees at *Garden Discovery Days*
- 2,578 *10-Minute University* presentation attendees at multiple events

Volunteers make a huge contribution to the community and are really what make Extension programs happen at the local level. Based on the published hourly rate for volunteer hours in Oregon of \$21.99/hour, Clackamas County Master Gardeners volunteer contributions of their time serving the public this past year was just over \$209,000!

If you'd like to join the movement, learn the latest in gardening information, and work with an incredible group of dedicated volunteers, contact the Clackamas County Extension office for information.

AGRICULTURE

CROPTIME to Launch in 2016

1. COTYLEDON
2. 6 TRUE LEAVES
3. CUPPING



4. HEAD INITIATION
5. HEAD DEVELOPMENT
6. MATURE



For the past three years, Metro Extension Small Farms Agent, Nick Andrews, and a group of other OSU Extension faculty and staff have been working with local farmers to come up with better ways to predict when vegetable crops will mature.

According to Andrews, “Vegetable growers and home gardeners have relied on the ‘days to maturity’ information in seed catalogs and packets and their personal experience to help them determine when crops will be ready to harvest. Better accuracy could help small and large acreage farmers manage harvest crews, maintain delivery schedules and supply markets more consistently, and become more profitable. It could also help packers improve consistent supply of local produce and reduce waste.”

Research has shown that measuring the “heat units” accumulated over time more accurately predicts plant development and can be used to time weeding, fertilizers, pest management and harvest. Orchardists have used the heat-unit concept to manage pests like codling moth for at least 30 years. They have shown that mathematical models can be useful decision tools that are practical for farmers to use.

The CROPTIME team has been collecting weekly measurements of crop development and utilizing the OSU Integrated Plant Protection Center’s pest and crop modeling website to access temperature data from online automatic weather stations. This information is now being used to create “degree day models”—that will predict harvest dates in 15 different vegetable crops including more than 65 varieties. The field data collection has been done at more than a dozen local farms in the area, as well as, the North Willamette Research and Extension Center (NWREC), the OSU Vegetable Farm in Corvallis, and a Bejo Seeds variety trial in Junction City.

“We expect to have our first vegetable degree day models ready to release in the spring of 2016,” said Andrews. “Everything will be available on-line at the CROPTIME website-- <http://smallfarms.oregonstate.edu/croptime>. All you need to do is select a nearby weather station, choose your vegetable variety and, then enter up to four planting dates. The models do the rest.”

To learn more about CROPTIME, be watching for workshops in the community in the coming months. Or, contact Nick Andrews at nick.andrews@oregonstate.edu.

Funding Restores Veggie Position

The 2015 Oregon Legislature provided approximately \$14 million in new funding to the Oregon State University’s Public Statewide Services. This is the first significant increase in funding for Extension and research programs in the past 15 years. The new monies will support Extension Service, Experiment Station, and Forest Research Laboratory programs at OSU.

One new position funded with these dollars will be the restoration of the Extension Vegetable and Specialty Seed Crops faculty member at NWREC. This position has been vacant for the past 3 ½ years.

“This is great news for the vegetable and specialty seed crop farmers in the North Valley,” said Mike Bondi, NWREC’s Director. “We have been waiting patiently to get this important position filled. This will be critical to helping farmers in areas of field production, irrigation, pest management, marketing, and food safety—just to mention a few of the education and applied research needs.”

Bondi expects to begin advertising with a national search for the new Extension Vegetable Crops faculty member by this spring with a start date in September.

AGRICULTURE

Farm Equipment Safety Training Consortium Forming

Beginning in 2012, the North Willamette Research and Extension Center (NWREC) began offering youth farm tractor safety training classes. The training program was offered in conjunction with the OSU Extension office and 4-H program in Clackamas County. 4-H had been receiving requests for a certified tractor training program for several years, but didn't have facilities or instructors to offer the training.

NWREC has an ideal location, equipment, and staff who operate farm machinery daily—plus the desire to teach and share their knowledge. Since 2012, nine youth trainings have been taught to over 170 participants ages 14-17. The youth training is nationally certified and includes 20 hours of classroom and hands-on machine experience driving, backing, and working with 3-point hitch attachments. Certified students are eligible to be hired in the community by farmers needing assistance.

As the youth tractor safety training program has grown, demand for additional trainings has increased, too. Adults began requesting help. These

included people new to farming or new to their tractor and wanting professional help to learn operation and safety principles. Basic skills were needed, but more advanced classes have been requested, as well. Hispanic language sessions, ATVs for farm uses, and forklift trainings have been suggested as additional areas for training in the future.

To meet these growing needs, a *Farm Equipment Safety Training Consortium* is being formed. The Consortium of interested partners—individuals, businesses, organizations, and agencies—is coming together to sustain this educational effort. The Consortium goal is to raise \$30,000 annually to support the trainings with staff, do marketing and outreach, supply equipment needs, and grow the program going forward. The first Consortium partner committed to the effort is the Clackamas Farm Bureau Chapter with a \$2,500 contribution. Additional partners are invited to join with contributions of \$500 to \$5,000.

“We see the Consortium as a key element promoting the development of these trainings and support delivery in



NWREC's Derek Wells, Assistant Farm Manager, leads the tractor trainings offered to youth and adults.

the North Willamette Valley,” said Mike Bondi, NWREC Director. “There is much more we can do within the farm equipment safety training area. The Consortium will be the catalyst to create a strong and on-going program we can ensure in the community each year.”

Consortium funding will provide the hiring of additional student farm help in the summer to free up NWREC's permanent farm team to lead the trainings. Also, Consortium funding will provide marketing and promotion resources for

the program plus training equipment and materials.

According to Bondi, “I see NWREC becoming the leader in farm equipment safety training in the state—if not the Pacific Northwest. There just isn't anything like what we are doing anywhere else in the region.”

To find out more about NWREC's Farm Equipment Safety Training Consortium or to join this community effort, contact Bondi. His email is michael.bondi@oregonstate.edu.

Denmark and Oregon — Special Christmas Tree Connection



Shiny new multi-row machine set up to spray and prune the base of the trees.

Chal Landgren, OSU's Christmas Tree Specialist at NWREC, returned last October from a six-month sabbatical in Denmark. Of all places in the world that produce Christmas trees, Oregon's industry is most similar to the country of Denmark for the approximate number of growers and production, growing conditions, and tree species we both grow.

In fact, over the years, the connections between these two locations have grown closely—with multiple visits back and forth from both sides with several important collaborations in research and education.

While in Denmark, Chal spent time studying noble fir cultural techniques to produce more “open or natural” trees—something people talk a lot about in the PNW, but, our approach is to produce a much more heavily cultured or “trimmed” tree. But, Danes only grow “open” or very lightly cultured trees.

Also, Chal worked with his Danish research counterparts to investigate Nordmann and noble fir terminal leader control using plant growth regulators. This has been on-going research in Denmark initiated in that country and is now being looked at for PNW applications.

Much of what happens in Denmark is driven by the extremely high cost of labor—field labor rates are easily

three times greater than in the U.S. As a result, the Danes have become the world leaders in developing narrow-gauge tractors, multi-row and multi-function implements for use in Christmas tree fields. These innovations have helped minimize hand labor costs. You see equipment in Denmark like nowhere else. The Danes also grow many more trees per acre than we do in the Northwest—as an attempt to hold costs per acre down and utilize their land more efficiently since land is much more expensive to acquire in Denmark and more limited in availability.



AGRICULTURE



This year's attendees enjoyed a time to reconnect with acquaintances and meet new friends.

Harvest Dinner— another fun evening!

The North Willamette Research and Extension Center's tradition of hosting a fall, end of season, Harvest Dinner is growing in popularity. This past October's event attracted 180 attendees—up 50% from the year before.

What began as a small garden party and thank you for those who are involved in NWREC's programs and activities, has steadily grown each of its four years starting in 2011 with 45 people.

"The Harvest Dinner has been fun to see grow. We really appreciate the community's interest in what we do at NWREC and their support," said Mike Bondi, the Center's Director. The 2015 Harvest Dinner included financial, endowment and in-kind supporters at NWREC, local farmers and cooperators, faculty and staff, eight state Legislators, three County Commissioners, a mayor, and College of Agricultural Sciences and Extension Service administrators from Corvallis.

As in past years, the dinner featured produce from the research, education and demonstration projects—and leased land—at NWREC. The menu is specially prepared each year by chefs

at Bon Appetit Catering Company located at George Fox University in Newberg. Other special features at the dinner included the OSU Beaver Classic cheeses (made by students in the Food Science and Technology program on campus), hazelnuts provided by the industry, and a smoked pig prepared by Ebner's Custom Meats in Canby.

We gratefully acknowledge the following businesses and organizations who helped sponsor this year's Harvest Dinner and make the event possible. The contributors included:

- Pacific Northwest Christmas Tree Association
- Oregon Department of Agriculture
- Friends of Family Farmers
- Northwest Transplants
- Oregon Blueberry Commission
- Oregon State University Extension Service
- Northwest Farm Credit Services
- Weather Café
- Pratum Coop
- Nursery Connection
- Oregon Hazelnut Marketing Board
- OSU College of Agricultural Sciences
- Willamette Valley Vineyards
- Oswego Hills Winery

Former High School Student Returns Home to Mentor Others

What began six years ago as a unique opportunity for a local West Linn High School student has become a story of giving back.

Ann Bernert—a high school sophomore then—was looking for an opportunity to study with a science researcher and develop ideas for her school's annual science fair. She connected with Nursery Plant Pathologist, Luisa Santamaria, at Aurora's North Willamette Research and Extension Center. And, that opened the doors to a whole new world of science, research—and, eventually, career possibilities. Last June, Bernert graduated with her Bachelor of Science degree in BioResource Research from Oregon State University.

Bernert was the first in what has been more than a dozen high school students coming to NWREC—mostly from the West Linn and Wilsonville School District—over the years to learn scientific methods, explore their interests and dream projects, work alongside professional researchers, and learn about career opportunities.

Today, Bernert works for her former school district mentoring high school youth wanting to have a similar experience that she had.

"It was an incredible life experience for me—getting to work in Luisa's pathology lab, learning lab skills, seeing how real research is done, and using the specialized equipment they have. It was all a great motivation to me. When I went off to college, everything was much more meaningful in my studies. I could easily see the connections to what I was studying and doing."

Bernert is back in the pathology lab at NWREC, this time helping connect Kris Wieland, a junior at Wilsonville High School, with her former mentor, Santamaria. Wieland is interning at NWREC working on a project examining how fungicides might affect symbiotic bacterial communities in root systems of nursery plants. Kris's project will be part of the school district's annual fair, the CREST-Jane Goodall Science Symposium, this spring.

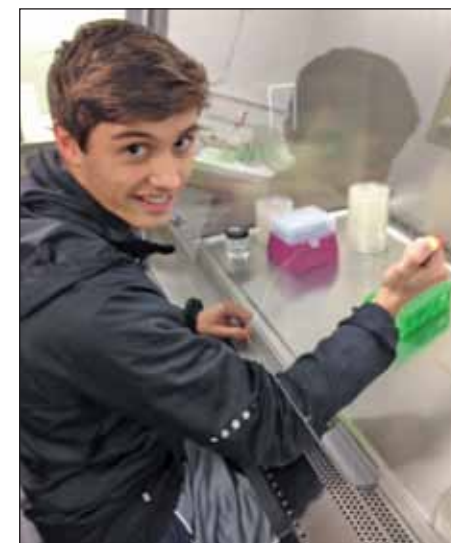
A mutual goal of the collaboration between the school district and NWREC has been to interest our

brightest high school minds to the opportunities available in agricultural sciences—as well as, STEM (Science, Technology, Engineering and Mathematics) fields, in general. Students have found that the skills they develop through their studies at NWREC have helped them in their career development regardless of whether they choose to pursue studies in agriculture or some other field.

One NWREC student alum decided to pursue a profession in medicine and found that the laboratory skills she learned while training at NWREC helped her invaluable in becoming a doctor.

Dylan Martins, a senior at West Linn High School, is another student currently taking advantage of the support that NWREC is able to provide for budding scientists and agricultural enthusiasts. With an interest in pollinator health, Dylan began a research project to better understand the honey bee microbiome and how certain microbial species might have a lasting impact on honey bee colony health. The laboratory space and specialized equipment available at NWREC make his work possible—further fueling his passion.

Dylan will join Kris to present their findings at the CREST-Jane Goodall Science Symposium on February 26 (6:00pm) at West Linn High School. The public is invited.



Dylan Martins, West Linn High School senior, working in NWREC nursery pathology lab.

AGRICULTURE

Hybrid Approach Used for Pesticide Trainings

Most greenhouse and nursery managers have to be prepared to control insect pest and disease outbreaks that can be big challenges in their businesses. The usual procedure is to have the business's employees licensed as pesticide applicators to ensure safe operating procedures.

But, over the past years during her regular plant health nursery worker trainings, NWREC's Nursery Plant Pathologist and Bilingual Educator, Luisa Santamaria, has become aware that the success rate for employees taking the pesticide applicator exams is very low—down to 12% for those taking the exam in Spanish.

Luisa and her Educational Program Assistant, Gilberto Uribe, conducted a pilot training a year ago to provide assistance to Spanish-speaking workers—the vast majority of workers in the nursery and greenhouse industries—trying to get their licenses. From that experience, Santamaria and Uribe have designed a new approach to learning for the Hispanic audience.

The class is a hybrid training that includes traditional face-to-face learning plus remote teaching through online resources that allow the students to progress at their own rate, become more familiar with the technology needed to take the exam, and learn in Spanish—rather than English—over the course of four weeks.

“Our pilot class last revealed some interesting insights,” said Santamaria. “It's really hard to expect Spanish-speaking people to be successful when the test



they will take is partially in English, and the typical preparation for the test is an all-day training session, which can be a challenge for most. We wanted to focus on the areas that everyone struggles with the most, while helping them develop their test-taking skills, and providing the workers more time to process the information and learn new concepts.”

Also, Santamaria and Uribe found that mathematics needed for pesticide calibration questions is one of the

topics of most interest among the participants. And, since not all Hispanic workers have access to computers, there was need for greater familiarity and practice with technology used for taking the exams since it is also offered in a more convenient computer-based format.

A grant from Clackamas Extension's Innovative Grant program in 2015 aided the development of the hybrid pesticide applicators exam training by purchasing Chromebooks for use in the class and to develop course materials.

The first hybrid training course consisted of 18 students from seven nurseries in the area and one landscaping firm. The course is designed to be offered several times each year, as needed.

Santamaria and Uribe report that their first class of students were very positive about their hybrid learning experience. More than ½ of the class felt confident enough to take the exam as a result of the training. They rated the training as highly satisfactory and efficient for learning. While some of the students had little or no skills using computers, they did report that the hybrid class gave them the confidence, ability, and motivation to overcome their doubts and face this challenge.

“Based on the early results, it appears the hybrid training approach will be popular with our nursery and greenhouse workers and, more importantly, prepare them for their work,” Santamaria said.

New Way to Pick Blueberries?

One of the big fears facing farmers these days is labor. Who will pick our crops? Agriculture is highly dependent on a migrant labor force and it's getting harder and harder to find workers when you need them.

Mechanical or machine harvesters that go over the berry rows in the fields are commonly used by growers to harvest blueberries, raspberries and blackberries when fruit is going to a processing market. In those cases, bruised fruit doesn't matter as much—when freezing, making jams, pies, juices, and other products.

But, berries going into the fresh market require higher quality standards. Not only is appearance important, but bruised fruit doesn't have as long a shelf life. So, when picking fresh, hand picking is the way it's done.

Wei Yang, NWREC's Small Fruit Extension Agent, and his Research Technician, Heather Andrews, have been looking at

using a hand held picker to speed up the harvest of fresh market blueberries—without compromising fruit quality.

During 2015, Yang and Andrews compared blueberry harvesting by hand, using a hand-held olive shaker, and an over-the-row (OTR) harvester. Total fruit weight harvested (ripe and unripe), fruit firmness, internal bruising, plus sugar and acidity contents were measured. Also, the longevity of fruit quality was assessed under cold storage conditions for



up to five weeks following harvest.

The hand-held olive shaker removed up to 15 times more fruit compared with fruit picked by simply by hand! The sugar levels were lower and acidity levels higher in the fruit harvested with the olive shaker compared with conventional hand-picked fruit, indicating that more unripe berries were collected with the hand-held shaker.

Fruit picked by hand tended to be firmer compared with that collected with the shaker—but, depended on the variety of berry being harvested. Fruit harvested with the OTR machine was significantly softer than all other samples collected, and had approximately three times more bruising compared with the hand-held shaker and hand picking.

These 2015 results indicate that the



hand-held olive shaker could be a promising option when harvesting fresh market blueberries to minimize labor and speed the picking process. During 2016, Yang and Andrews will be looking at other hand-held mechanical picking devices used with other crops and developing improved designs to better meet the needs of blueberry growers.

AGRICULTURE

You Can Join the NWREC Team, Too!

Farming is as old as mankind and, even today, is one of the most important industries in the Portland metropolitan and the North Willamette Valley area. Agriculture sustains our economy and creates a standard of living and lifestyle for all of us that makes this state what it is.

Just look at the number of people working in agriculture directly—not to mention those handling food-related products, in transportation, or marketing. Oregon farm crops generate more than \$5 billion in direct sales for growers and producers annually. Our products are sold throughout the state, the region, and around the world.

Oregon State University's only farm experimental center in this region of the state is in Clackamas County—the North Willamette Research and Extension Center (NWREC) near Aurora. For the past sixty years, NWREC has been at the cutting edge of research and education that supports all farmers—big, small, urban, rural, organic and conventional. This is where those in farm production go for the latest information.

Show your support for farming. Keep the food flowing. We all benefit. Join the **FRIENDS OF NWREC** today!

NWREC is accepting donations to their Friends campaign for 2016. All contributions can be tax deductible and are made to the Oregon State University Foundation. Your support is used to help maintain on-going research, pioneer new concepts and ideas, improve facilities, create youth employment opportunities, and provide outreach in the community. Contributions at any level are welcome. Donations of \$100 or more receive a complimentary invitation to NWREC's Harvest Dinner in the fall—a special time to enjoy the fruits of the Center's work during the past harvest season.

For information how you can join the **FRIENDS OF NWREC** today, go to the website at <http://oregonstate.edu/dept/NWREC> and click on the **FRIENDS OF NWREC** link on the right rail.



Nursery IPM Focuses on Best Practices to Control Pests with Fewer Impacts

Nursery Integrated Pest Management (IPM) Extension Educator, Robin Rosetta, at the North Willamette Research and Extension Center, has built a program designed to increase the efficiency of nursery management programs to control pests while reducing the negative impacts. Her multi-pronged approach includes outreach through her PNW Nursery IPM website, an IPM Alert listserv, Twitter and Facebook; an annual series of workshops, called OktoberPest; and an innovative and impactful research program.

Building on the success of work the past two years—developing and testing concepts of “intelligent spray systems”—Rosetta and a multi-state team of researchers were awarded a \$3.6million grant in 2015 to take their work to the next level. The intelligent spray technology uses laser and sensor systems to detect the presence and structure of the crop plants in a field—then, turn on and turn off the sprayer so applications can be made more efficiently.

Dr. Jay Pscheidt, OSU Extension Plant Pathologist in Corvallis, joins Rosetta and scientists from Clemson University, The Ohio State University, Texas A&M University, University of Tennessee, and USDA-Agricultural Research Service's (ARS) Applica-

tion Technology Research Unit in Ohio.

The project, led by Dr. Heping Zhu, USDA-ARS, will develop a universal intelligent spray system that can be easily retrofitted on conventional or new sprayers for pesticide spray applications. The retrofit will enable sprayers to match nozzle outputs to crop characteristics in the field and will allow growers to use their existing sprayers rather than rely on the purchase of new sprayers to use this technology.

“We’ve seen tremendous reductions in the volume of pesticides applied with intelligent sprayer technology and now it will be more accessible than ever with the emphasis on a universal retrofit,” said Rosetta.

There are new features with the next design that include a premixing in-line injection system to avoid leftover tank mixtures. “I’m really excited about our expansion into other cropping systems, too. We believe we can show how this technology can benefit a wide variety of farmers.”

Plans are now underway to evaluate the spray systems in nurseries, orchards, vineyards, small fruit plantings, tree nuts, greenhouses and other specialty crops during the next five years.

AGRICULTURE

Pesticides, Your Food, and Food Safety

Pesticide use in agriculture is a highly regulated practice. And, Oregon State University is at the center of ensuring the safe use of pesticides applied to our food crops, grazing and feed stocks, and to landscape ornamental and greenhouse crops.

These pesticides include synthetic products used by conventional farmers, as well as, organically-approved pesticides used by organic farmers. Regardless, all pesticides have to be evaluated for their risks and benefits before the US Environmental Protection Agency will grant a label for a legal use.

OSU's Specialty Crops Research and Registration (SCRR) program for the state is located at the North Willamette Research and Extension Center in Clackamas County. At NWREC—university faculty and staff, in cooperation with other OSU researchers and Extension personnel from around Oregon, growers, agrochemical representatives, crop consultants, and the US Department of Agriculture—identify the most important pesticide needs of the farming community and gather the unbiased research data needed by state and federal government regulators to determine safe and legal uses of agricultural pesticides.

In 2015, the OSU's SCRR program completed the following field trials:



Pete Sturman, Bio Research Technician, making an herbicide application in grass seed during winter dormancy.

SPECIALTY FOOD CROPS

- 24 residue field trials were conducted in 2015, involving 13 different crops and 15 different pesticide active ingredients (including herbicides, fungicides, insecticides, miticides, and plant growth regulators). These trials provide essential data to establish 'minimum days until harvest' requirements for

food crops that have been treated with pesticides and to establish re-entry safety guidelines for farm workers.

- 10 of these field trials were in plots located at NWREC on raspberries, blackberries, strawberries, blueberries, mustard greens, and peas.
- 14 more trials were conducted at loca-

tions around the Willamette Valley on grapes, peas, blackberries, grass and clover seed, plums, bulb onions, cabbage, broccoli and dry peas. Many of these trials were conducted at farms around the region who were kind enough to collaborate on the field data collection.

- In addition to these residue field trials, efficacy (or effectiveness) and crop safety field trials for new fungicide and herbicide products were conducted in raspberry plots at NWREC. Also, 2015 saw the completion of a 3-year study to develop degradation curves of blueberries sprayed with 13 different already-registered, commonly used blueberry insecticides. The results will help growers and shippers determine the best harvest date to ensure fruit shipped to foreign markets will not be in violation of, or above the maximum residue level (MRL) of, that country's legal limits for the pesticide.

ORNAMENTAL TRIALS

- 26 crop safety trials were conducted in 2015, testing new fungicides and insecticides, using 20 different plant species that included woody and herbaceous perennials.

Organic Berries—Oregon Leads the Nation

Ten years ago, only about 2% of the total blueberry acreage in Oregon was certified as organically grown. Growers could see increasing demand from consumers—but, struggled just how to put a product into the market at a competitive price. They wanted to meet the demand, but needed help.

In 2006, growers approached Bernadine Strik, NWREC's Berry Research Leader, with their dilemma. Strik assembled an advisory group to identify the biggest questions and how to find the answers. Berry farmers were looking for the most economical way to grow their crop—should they grow their berries on flat ground or with raised beds; what are the best ways to control weeds in organic systems; which organic fertilizers work best and what rates should they be applying; what berry cultivars are best suited to organic production; and, are some mulches better than others?

After nearly a decade of research, many lessons have

been learned. Here's what the growers now know:

- Establishing new fields on raised beds is best—with an average yield increase of 22% compared to flat ground.
- While weed mat (porous, black plastic ground cover) has offered the most economical way to control weeds in organic systems, there has been little effect of mulch type on yield or fruit quality.
- Plants grown with weed mat have needed 30 to 50% more irrigation because the plants grow differently (have smaller root systems) than when grown with a standard sawdust mulch.
- Some varieties of blueberries are less adapted for growing organically, indicating that growers need to choose wisely to get good production and returns.
- Various types of organic fertilizers can be used and each offer growers specific advantages, including some types that may be applied through the drip irrigation system.

Since the organic blueberry research began at NWREC, weed mat has become very common in organic, as well as, conventional blueberry fields, significantly reducing costs of herbicides and hand weeding. Today, 20% of Oregon's total blueberry acreage is being grown as certified organic. And, Oregon is the nation's leader in organic blueberry production.

In June, 2015, Javier Fernandez-Salvador, a PhD student of Strik's at OSU in Corvallis, began a survey of Oregon's organic blueberry industry to better understand practices being used and the adoption of NWREC's research. Preliminary findings indicate that many of Oregon's smaller blueberry growers are not aware of this ground-breaking research nor are utilizing this information to improve management on their farms.

Survey work is continuing to determine the most effective ways to reach the entire organic blueberry industry with up-to-date information.

AGRICULTURE

Weed Control Huge Issue for Rhubarb Farmers



It doesn't matter whether you're a vegetable grower, a berry farmer, manage Christmas trees, nursery stock or operate a greenhouse—controlling unwanted weeds is often a huge challenge. Home gardeners certainly know this. Sure, weedy fields look bad—but the real problem is the competition the weeds provide to the crop being grown. Weeds rob the crop of water, nutrients and often harbor insect, disease or rodent pests. In worse cases, weeds can reduce growth by shading the crop plant of needed sunlight.

Weed management in vegetable crops here in the North Willamette Valley was a special focus this past year for Ed Peachey, OSU Vegetable Extension Specialist, housed at OSU in Corvallis.

Oregon leads the U.S. in commercial rhubarb production—with more rhubarb grown in Clackamas County than any other county in Oregon—as well as the nation! “Weed management in rhubarb is an important problem farmers face,” said Peachey. “Weeds are typically out of control in rhubarb because this is a long term perennial crop with few opportunities to use cultivation and tillage to control weeds.”

Organic farmers struggle even more and are often limited to hand weeding only —having only a few organically approved herbicides for their use.

Last winter, several rhubarb growers met with Peachey to look at weed control strategies. The emphasis this past year was on dormant season applications of weed control herbicides. Later in the spring, growers met, again, to evaluate the treatments and compare costs.

“The farmers were excited to see some new possible treatments that provided good control, didn't injure the crop, and were reasonably priced. That's real success in our business!” said Peachey.

Now, growers want to see a repeat of 2015 trials to verify that what they saw this past year just wasn't chance. “Verification is an important step in field science. Growers want to be sure they are going to get the responses they need and want. They have a lot invested in these decisions and we all take it seriously.”

So, the next time you enjoy a delicious strawberry rhubarb pie, thank an Oregon rhubarb farmer and the work they do to grow this crop for us!

Wiman Joins NWREC Team

BY KYM POKARNY,
OSU EXTENSION AND EXPERIMENT
STATION COMMUNICATIONS, CORVALLIS

AURORA, Ore. – Oregon State University has hired a new orchard crops specialist to help the state's rapidly expanding hazelnut industry, which grows 99 percent of the U.S. crop.

Entomologist Nik Wiman, who spent the last three years at OSU researching the brown marmorated stink bug, fills a position held for 30 years by Jeff Olson, who died unexpectedly in January 2014. Wiman is based at OSU's North Willamette Research and Extension Center in Aurora. He began his new position in mid-September.

“There's a lot of pent-up need by growers,” said Mike Bondi, the Center's Director and a Regional Administrator for OSU's Extension Service. “Nik will be facing a lot of folks hungry for his help.”

“The hazelnut industry is in a state of extreme expansion,” said Polly Owen, the Director of the Hazelnut Industry Office. “Farmers are replacing other crops with hazelnuts and people new to farming are planting hazelnuts. In both cases, the need for basic facts about hazelnut production without bias from vendors who sell products is very important. The position requires a high degree of passion for the entire industry and a 360-degree view of all that makes up the industry. Nik has that.”

“The stink bug and eastern filbert blight are the two most serious problems for hazelnut growers, but other aspects of production need attention, too,” said Wiman, who earned a doctorate in entomology from Washington State University.

“We have a very successful breeding program at OSU led by Shawn Mehlenbacher that has introduced blight-resistant cultivars,” he said. “But, we also need to address issues like soils, irriga-

tion and pruning. There is a huge boom of orchards going in on marginal soil with questionable practices. I want to address that. I want to help the growers get the most production out of their trees.”

Oregon hazelnut growers produced 75 million pounds of nuts and posted sales of \$91 million in 2014, according to Owen. More than half of the 2,730 acres planted between 2009 and 2012 were Jefferson, a hazelnut variety released by OSU in 2009. Unofficial estimates, however, say the number of new acres during that time was 11,000 to 12,000, with more than half being Jefferson.

Hazelnuts won't be Wiman's only responsibility. He will devote some of his



Nik Wiman, OSU's new Orchard Crops Extension Specialist.

Photo by Stephen Ward

time to issues affecting fruit tree crops such as apples and pears.

“Nik has an excellent research pedigree and experience with Extension and outreach education,” said Bondi. “He also has a very strong background in orchard crops and horticulture, so he can work across the range of fruit and nut tree questions and needs.”

“Right now I'm in the listening stage,” said

Wiman, who will spend 80 percent of his job on Extension and 20 percent on research. “I've only been on the job for a short time and already I've had a lot of good interactions with industry people and a lot of support from the hazelnut commission and organizations.”

4-H YOUTH DEVELOPMENT

4-H Youth in Clackamas County on Thriving Trajectory

In 4-H Youth Development, we imagine a future where youth successfully transition to adulthood. These adults lead lives full of health, well-being, and economic stability. They are engaged in and improve their communities. It isn't a fantasy – we see stories like this every day. Also, it isn't an accident.

What does it take to turn an eager young person into a successful adult? It takes intentional programs that put youth on a Thriving Trajectory of development. In fact, the 4-H Youth Development Program is built on more than 100 years of research into what makes youth thrive.

We start by figuring out what a young person is interested in—what is the spark that excites them? Through 4-H, they explore this area along with other youth. They interact with adults who care and take a personal interest in them. They meet regularly throughout the year, often for several years in a row, and develop strong relationships. They learn how to communicate, lead, serve, and make good decisions.

4-H CLUBS MAKE AN IMPACT ON YOUTH AND COMMUNITIES

A 4-H Club is a group of youth, ages 5-18, that share

We are Clackamas County, and



common interests. They meet throughout the year to learn new skills and provide service to their community. Clubs are led by trained volunteers. The average 4-H club member spends 150 hours during the year working on their projects, meeting with their club, and participating in 4-H events. There are more than 60 project areas that youth explore in Clackamas County, ranging

from animals to art and science.

Over the last two years, we have been assessing the impacts of our program. Forget the stereotypes about young people you may have heard—4-H members are different! Did you know:

CLACKAMAS COUNTY 4-HERS IN GRADES 4-7 "AGREE" OR "STRONGLY AGREE" THAT, BECAUSE OF 4-H, THEY:

- Take responsibility for their actions (92.3%)
- Are comfortable making their own decisions (96.3%)
- Don't give in to peer pressure (96.3%)
- Work successfully with adults (99.3%)
- Want to help others (98.4%)

CLACKAMAS COUNTY 4-HERS IN GRADES 8-12 "AGREE" OR "STRONGLY AGREE" THAT, BECAUSE OF 4-H, THEY:

- Have a plan for reaching their goals (96.4%)
- Are willing to consider others' ideas (97.4%)
- Have talents to offer (95.6%)
- Stand up for things that are important (95.6%)
- Know who to go to if they have a problem (99.7%)

Photography Now Top 4-H Project in County

Over 1,000 youth ages 5 through 19 participate in 4-H Club activities every year in Clackamas County. Club members choose one or more projects – topic areas that excite them – to learn about during the year. In fact, 4-H has more than 60 projects available, ranging from horses, cows, pigs, sheep and chickens to dogs, cats, reptiles, cooking, clothing, horticulture, geology, forestry and shooting sports—just to name a few.

The interests of youth change over time, and 4-H is constantly adapting. For years, Horse 4-H was the most popular project with annual enrollment peaking around 700 youth in the 1970s. Clackamas County has the largest horse program in the state by a large margin. But, in 2015, Photography nosed out Horse for the #1 project spot.

According to Clackamas County Extension 4-H Agent Jan Williams, photography has been a steadily growing project for several years. “Youth are more involved in taking photos and have more

TOP 10 COMPARISON OVER THE PAST DECADE:

Rank	2004/05 Projects	Youth Enrolled	2014/15 Projects	Youth Enrolled
1	Horse	449	Photography	331
2	Swine	165	Horse	328
3	Foods & Nutrition	151	Arts	286
4	Clothing & Textiles	125	Foods & Nutrition	193
5	4-H Adventures (Grades K-3)	118	4-H Cloverbuds (Ages 5-8)	162
6	Leadership	100	Horticulture	156
7	Sheep	86	Clothing & Textiles	141
8	Photography	85	Fiber Arts	133
9	Rabbits	81	Rabbits	122
10	Dogs	73	Leadership	120

access to photography equipment. Through 4-H workshops, held each spring, and club educational meetings, youth are learning about composition, lighting, and photography as an art, a science and a communication tool. Many of our members enroll in photography

along with another project and use photos for reporting and documenting their progression.”

The horse program, like the horse industry as a whole, has been in a natural decline. Horses are expensive animals to keep and need adequate space and facili-

ties. “Many people remember hearing that Clackamas County was one of the top equine counties in the United States. That was true in 2002, when the US Census of Agriculture found there were 9223 horses in the county,” reports Wendy Hein, Clackamas County Extension 4-H Agent.

“But by the 2012 census, the number was down to 5504. The economic recession over the past several years, plus changes in land use, really took a toll on the industry. 4-H has held on better than other parts of the industry, but we still see the effects of this decline.” Although owning a horse is not a requirement of the 4-H program, members are best able to demonstrate their skills if they use a horse that they ride consistently and personally train.

The best time to join 4-H is in the fall or winter. New members who join a club before March 10 are eligible to participate in this summer's County Fair. Horse, Dog and Shooting Sports projects have earlier deadlines.

4-H YOUTH DEVELOPMENT

4-H Shooting Sports Interest Growing

The 4-H Shooting Sports is a huge project for 4-H nationally with 47 states offering the program and nearly 250,000 youth involved. The 4-H Shooting Sports curriculum uses the resources of the land-grant university and the time, talent, and dedication of Extension agents and certified 4-H leaders, instructors, and trainers who guide 4-H members in firearms safety and marksmanship.

Youth learn marksmanship, the safe and responsible use of firearms, and the principles of hunting and archery. Shooting Sports discipline areas include: archery, muzzle loading, pistol, rifle, and shotgun. Youth must be at least nine years old as of September 1st to participate.

4-H members have opportunities to test their shooting, hunting and sportsmanship skills in club meetings, mail-in tournaments to qualify for the Oregon 4-H Shooting Sports State contest, and national competitions.

Shooting Sports is new to Clackamas County—starting only four years ago. Jan Williams, Clackamas County Extension 4-H Agent, and Education Program Assistant, Trisha White, provide leadership for the program in Clackamas County and serve as a part of the Oregon State 4-H Shooting Sports Leadership team. Both Williams and White are certified trainers who help prepare the adults to lead the 4-H Shoot Sports clubs and work

with the youth. During 2015 year, Williams and White trained and certified 42 adults at a regional training held November 13 – 14, 2015 at the 4-H Center in Salem.

In 2015, Clackamas County had four Shooting Sports Clubs located in Sandy, Eagle Creek, and Colton that included 36 enrolled youth. Out of the 25 members who participated in the State 4-H Mail-in tournament, 14 youth were invited and eight participated in the Oregon State 4-H Contest. Congratulations to Clackamas County Intermediate member, Dylan Nelson, from Sandy, who qualified in shotgun for the National 4-H Shooting Sports Contest held in Nebraska, June 2016!

FORESTRY AND NATURAL RESOURCES

Matzka Takes New Role as Forest Educator

Forests Forever, Inc. (FFI) and Oregon State University's Extension Forestry program have re-joined forces to deliver youth, adult and public education at the Hopkins Demonstration Forest near Beavercreek. FFI owns and manages the 140 acre demonstration forest visited by nearly 10,000 people annually for learning and recreation.

Matzka has been working at Hopkins since January, 2014 following the departure of Forest Educator, Tim DeLano. At that time, FFI and OSU decided to re-evaluate the educational programs at Hopkins and determine the best way to deliver learning at the forest.

According to Ken Everett, FFI's Executive Director, "We want our programs led by professional educators with a strong forestry, management, and natural resources background. Our goal at Hopkins is to provide a place where practical, hands-on resource management and science can come together to the benefit of the entire community. Working with OSU to provide a place where real-life forestry education can be practiced makes our programs very unique."

OSU launched a national search for a new forestry educator this past summer that led to Matzka. Peter has three forestry degrees from



Oregon State University—Bachelors, Masters, and PhD, all in forest engineering. He has practical skills and experience working as a logging engineer. In addition, Matzka worked with the Oregon Forest Resources Institute at the Oregon Garden's Rediscovery Forest in their youth education program for seven years. Matzka has another seven years of experience teaching forestry at Humboldt State University.

"We are excited to have Peter join our team at the Oregon State University Extension office in Oregon City—and to become a permanent part of the program at Hopkins. This is a great opportunity for OSU, too," said Mike Bondi, OSU Extension Regional Administrator and FFI Board member.

"Peter has excellent experience managing forest land and working with youth. We have really appreciated how he stepped into Hopkins and built programs over the past two years. He brings a lot of energy, new ideas, and practical skills. We see our programs at Hopkins growing in new and exciting ways."

Peter and his wife, Jenny, have two children, Ari, age 12 and Will, age 8. The Matzkas live in Silverton where Jenny is an elementary school teacher.



FORESTRY AND NATURAL RESOURCES

Helping Woodland Owners Learn From Each Other

Helping woodland owners learn from each other is the common thread across more than 40 education events involving about 2,400 participants in Clackamas Extension Forestry programs during 2015. This is the biggest and most active Extension Forestry program in the state.

For example, Mitch Triplett, Mulino, demonstrated an effective approach to converting nasty Himalayan blackberry patches to forest trees—without using herbicides! Key tips he shared at our Weed Management Field Day (April 18) were: 1) keep your tools sharp; 2) save your shoulders by keeping your work close to the body rather than reaching too high and too far; and, 3) take it a little at a time. Mitch has been working on about one acre a year using a steel blade on his weed whacker in the old canes and a good old scythe in softer young blackberry sprouts.

Another case is Dan Ten Eyck, Sandy, explaining his method for bucking logs to maximize timber value at the annual Clackamas County Farm Forestry Association Tree Farm Tour (September 12 at the Ten Eyck Ranch—2014 Woodland Farmer of the Year). Dan keeps the most important information close to his chest—literally, in his shirt pocket—where he has a field sheet of his current log prices along with the best log lengths and diameters to match. Dan works with his logger on each tree as they cut them to get the best log value for the current market.

And, then, there is Jack Thronson, Molalla, who has learned how to manage areas of Douglas-fir afflicted with the dreaded root disease, *Phellinus*, to replace them with disease-resistant western redcedar—even in the face of heavy deer browse. Jack demonstrated that healthy cedar stands can result from the combination of proper planting practices, intensive management of competing vegetation (with both machines and herbicides), and the careful maintenance of tubes protecting cedar seedlings from deer. It sounds as easy as 1-2-3, but it takes decades to learn the tricks and get it all right—and, then, to share the results with other woodland owners (Thronson Family Tree Farm, Clackamas Woodland Farmer of the Year 2015, and Recognition Banquet on October 22).

Sharing and networking with fellow woodland owners was also a big part of the day for over 600 participants at the 25th annual Clackamas Tree School (March 21, 2015). Ten local woodland owners served as instructors for some of the 70 classes at Tree School last year.

Reflecting on the 2015 Extension Forestry programs in Clackamas County, Glenn Ahrens, Extension Forester, said, “The key to success is Extension’s role as the education broker. We bring the science-based information and the experts together with our woodland owners. But, the best part is helping woodland owners become leaders and teachers themselves, so we all learn together about what’s important on the ground.”



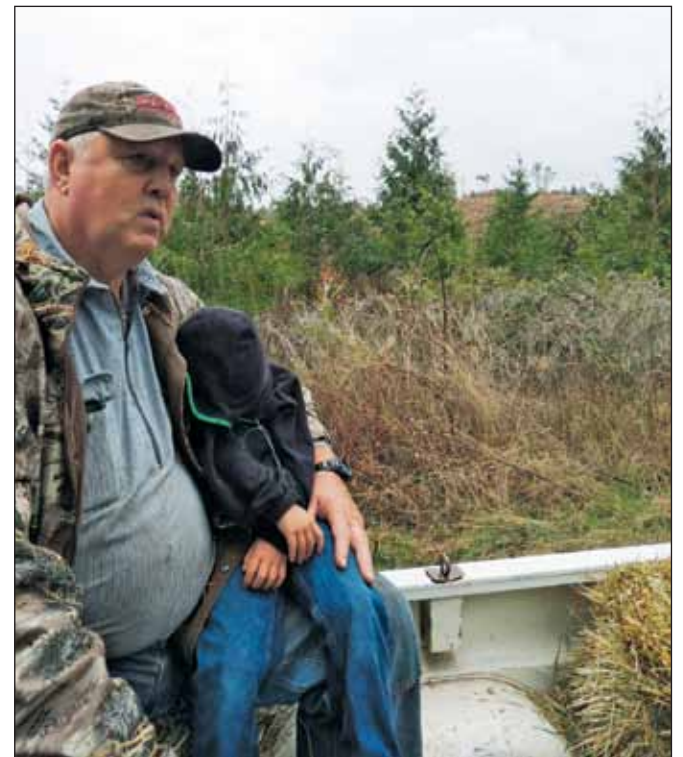
Dan TenEyck sharing his log market notes at Woodland Farmer of the Year tour.



Mitch Triplett explaining his approach to replacing Himalayan blackberry with trees at the Weed Management Field Day, April 18, 2015.



Mitch Triplett displays the main tools he uses to control Himalayan blackberry in preparation for tree planting.



Jack Thronson showing results of his effort to establish western redcedar on a Woodland Farmer of the Year 2015 field visit.

FORESTRY AND NATURAL RESOURCES

Lessons learned from the Estacada 36-Pit Fire – Extension Brokers the Exchange

The field tour *Fire without borders: Observations, experiences, and lessons learned from the 36-Pit Fire* east of Estacada revealed some important lessons learned about both fire behavior and fire management (May 29, 2015). There were about 45 attendees on the tour organized by OSU Extension Forestry and Natural Resources and the Northwest Fire Science Consortium, in collaboration with the Oregon Forest Resources Institute, Mt. Hood National Forest, Port Blakely Tree Farms, and Oregon Department of Forestry.

Fire scientists, incident managers and fire-fighters, foresters and woodland owners, and media specialists were brought together to discuss what happened and what was learned at various locations in the burn area.

The 36-Pit fire broke out on September 13, 2014 and spread quickly, burning a total of 5,524 acres. Fire-weather and fuel conditions were at their very worst for the year. Discussion at stops along the tour highlighted important lessons-learned, including:

- Fire slowed and dropped to the ground in commercially thinned stands.
- Initially, release of information to the public was hindered due to the



differing media policies of different agencies involved.

- A single point of contact for public information during a fire event is critical.
- Social media is useful for quick communication, but it must be monitored for accuracy.
- Town Hall meetings with the community helped coordinate communication efforts.

Most private forest land burned by the fire was up by Hillockburn Spring, owned by Port Blakely Tree Farms. Port Blakely Forester Lance Christensen noted that he was impressed with how well the fire management team worked. Facing the post-fire challenges on the tree farm, Lance said that rehabilitation and reforestation began immediately, but it is a difficult situation since they had just finished establishing a new plantation on the

rocky hilltop, only to have it burned back to bare ground.

Four participants also learned about the previous fire that led to the name “Hillockburn.” Gilbert Shibley, fourth-generation woodland owner in Springwater, put together the story of the 1902 Hillockburn fire, which started about where 36-Pit fire ended near Hillockburn Spring. The 1902 fire, likely started by an abandoned campfire, burned three to five times more acreage than 36-Pit. Gilbert’s great grandfather lost all twenty of his buildings. Gilbert now manages the family forest with a sharp eye (and nose) for fire and fire hazards.

The 36-Pit fire is a reminder that forests in western Oregon are a fire-driven ecosystem, even in managed forests. Extension Forestry programs in the future will address managing forests to be resilient to fire along with managing for fire safety and defensible space at the interface between woodlands and developed areas. Among the three elements determining forest fire hazard - weather, topography, and fuels - people can control only one. Fuels reduction is the key.



Hopkins Hosts Biggest Crowds Ever

The Hopkins Demonstration Forest has a banner year in their education programs during the past year. More than 5,000 youth—ages elementary through community college ages—participated in a variety of learning activities. Included were tours, hikes, science in the forest lessons, service learning activities, and demonstrations.

During 2015 the Hopkins education activities were led by Forest Educator, Peter Matzka, “we saw good growth in our outreach this past year. It was great to see the interest from schools throughout the Portland Metro area come out to our forest and be a part of our programs.” Matzka personally hosted more than 275 school groups, teacher workshops, and community service groups that came to Hopkins in 2015 bringing with them more than 4,700 youth and 1,600 adults!

One of Matzka’s main areas of effort in 2015 was the development of vocational forestry opportunities at Hopkins. He has been working closely with the Sabin Schellenberg Center in Milwaukie. Sabin students come out to Hopkins two to three times each week during the school year for their hands-on training in a forest.

“Being able to be at Hopkins is a tremendous opportunity for our students,” said Rob Waibel, the lead instructor for vocational forestry programs at Sabin Schellenberg. “We can do so much more here in a real forest that is being managed as a community resource. We get to use chainsaws and farm equipment, do surveying, work with hand tools, thin forests, plant trees, prune—you name it; we do it!”

Providing the vocational opportunities for high school youth in the area has led Waibel and Matzka to team up to create an organization of for Future Natural Resource Leaders (FNRL) and teachers around the state.

Ken Everett, Executive Director of Forests Forever, Inc., said, “Peter is doing a fantastic job building a high-quality educational program. He is getting very connected in the community. I know he is going to be taking our programs in new directions in 2016. I am looking forward to where he will be going next!”