

North Willamette Research and Extension Center

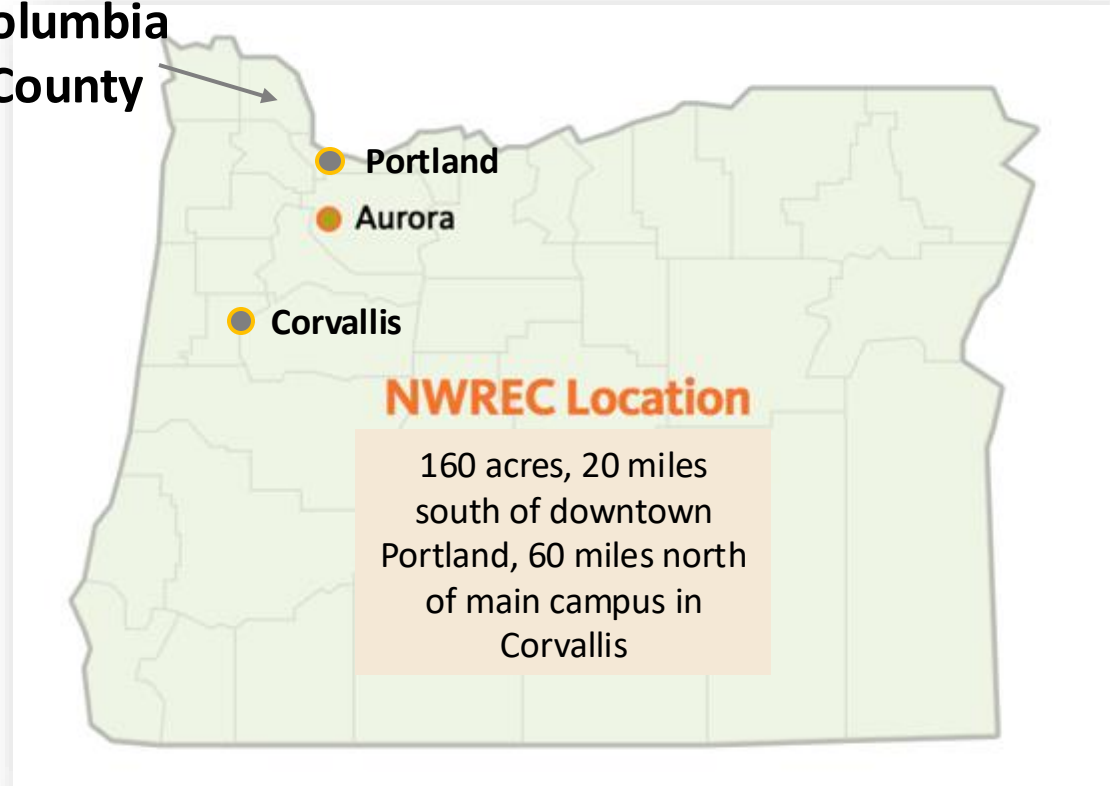
2025 Update



Steve Young, Director

Economic and Career Development

Columbia
County



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New Faces

- Personnel

- Dalila Rendon, Leader IR-4 Pesticide Registration Field Research Program
 - Assistant Professor (Practice), Department of Horticulture
- Priya Rajarapu, Christmas Tree Specialist
 - Assistant Professor, Department of Forest Engineering, Resources & Management
- Ann Vollrath, Student Intern
 - Marketing and Promotion, Department of Environmental Economics and Policy
- Steve Young, Director
 - Associate Professor, Department of Horticulture



2025 Highlights - Berry Crops

- A new berry sorting and processing area
 - Improve data collection capacity
 - Help meet the needs of stakeholders for both pre- and post-harvest fruit research
- New equipment to Individually Quick Freeze (IQF) and store fruit to mimic practices of the small fruit industries
- Two new long-term plantings
 - Blueberry and kiwiberry
 - Research on regionally important cultivars and production methods



Students full speed ahead during harvest.



Newly planted blueberry field.



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2025 Highlights – Blueberry Extension

- Sanitation practices for over-the-row blueberry machine harvesters
 - Essential information for production of fresh-market blueberries with assured microbial safety
- OSU Blueberry ChatBot
 - A cloud-based, AI-driven tool to access expert guidance
 - Integrates production, pest and disease management, harvest, postharvest handling, and marketing
 - Delivers real-time, personalized recommendations

<https://blueberry-bot.agsci.oregonstate.edu/>



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2025 Highlights – Christmas Trees

Research

- Integrative approaches to enhance drought tolerance in Christmas trees
 - Seedling survival with various cultural management practices
 - Cover crops for sustainable production
 - Mulch options to improve seedling survival
- Integrating genetics, sustainable practices, and outreach for a resilient Christmas tree industry

Extension

- Do you want to grow Christmas trees?, Tree School Field Day
- The Oregon Christmas Tree Story, World Forestry Series
- Numerous media requests
 - OPB, KOIN, FOX12, KGW, and Better Homes & Gardens
 - Highlight Christmas tree research at Oregon State University
 - Showcase the Christmas tree seed orchards at NWREC



One of many interviews that took place at NWREC this year in the Christmas Tree Seed Orchard.



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2025 Highlights – Nursery & Greenhouse

- Research

- Developing irrigation scheduling tools for growers - quantify crop water use and develop crop coefficients for woody ornamentals
- Approaches for extreme heat events - irrigation and substrate strategies to maintain plant quality
- Sensor networks, automated irrigation, and precision application technologies - improve labor efficiency and production sustainability

- Extension

- Hydro hints: What is hydroponics? Grow your knowledge of hydroponic food production, OSU Extension Guide
- Hot Pots: Cooling Containers in Nursery Production, Farwest Show Educational Session



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2025 Highlights – Hazelnuts & Tree Fruits

- Research
 - Sprayable protectants in hazelnuts – help to mitigate heat stress
 - Hazelnut bud rot – first detected and identified with impacts to buds and then leaves and nut husks
 - Sustainable management practices – using cover crops and basalt dust amendments to help reduce flail mowing and liming
 - Filbertworm management – developing moth flight data to model phenology based on degree day accumulation for improving integrated pest management
- Extension
 - “Bud rot disease and management of root borers” Wilbur Ellis Grower Meeting
 - “Advances in hazelnut nutrient management” Nut Growers Society of Oregon, Washington and British Columbia
 - “Light impacts feeding activity by brown marmorated stink bug on ‘Pinot noir’ grapes” Journal of Pest Science



Another successful hazelnut harvest!



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2025 Highlights – IR-4 Specialty Crops Registration

- Pesticide Registration Field Research (IR-4)
 - 17 field trials to evaluate pesticide residues in multiple specialty crops
 - Data are essential for safe registration of new pesticides by the Environmental Protection Agency
- IR-4 Food Use and Environmental Horticulture Workshops
 - Project requests reviewed and research priorities established for IR-4
 - Mission - help growers all over the US get the tools they need



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2025 Highlights – Small Farms

- Research
 - Production practices
 - Advancing irrigation knowledge and sensor-based skills for water-efficient small and medium-sized farms
 - Enhancing agricultural water management through cost-effective soil moisture monitoring systems
 - Business practices
 - Advancing beginning farmer and rancher viability by expanding our effective educational strategies
 - Alternative crops
 - Working with urban indigenous serving programs
 - New Organic Vegetable Approaches (NOVA): breaking vegetable boundaries
- Extension
 - Growing Farms: Building Climate Resilience for Farmers and Ranchers, OSU Extension
 - Women Farmer Network Fall Harvest Celebration, Clackamas County
 - Sagra del Radicchio Cabbage Table, Portland



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2025 Highlights – Vegetable & Specialty Seeds

- Organic seed production
 - Impact of seed production techniques on seed yield in organically grown tomato, lettuce, broccoli, and squash crops
 - National project by the Organic Seed Alliance to enhance the knowledge and resources available for organic seed growers through USDA's Organic Research and Extension Initiative
- Integrating technology
 - Grower field days and education events with production trials to assess the efficacy of using technology on farms
 - Compared plant health between crops managed with a drone spray equipment and crops managed with tractor-mounted sprayers
 - Investigated the potential for robot weeding equipment (FarmDroid.com) to reduce costs of labor crews on farms



FarmDroid demonstration during NWREC field day



Lettuce for seed in full flower



FarmDroid robot weeding system



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2025 Highlights – Collaborators

- OSU Biological and Environmental Engineering Department
 - Agrivoltaics
 - Understand light-water-nutrient tradeoffs and long-term soil health
 - Grazing forage growth and blueberries
 - Sustainable Groundwater
 - Inaugural recharge experiment conducted at the Managed Aquifer Recharge (MAR) Innovation site
 - Evaluate subsurface flow behavior and system response under controlled conditions
 - Understanding recharge dynamics and advancing sustainable groundwater management



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2025 Highlights – Collaborators

- Olea Project, OSU Extension
 - Olive evaluation – planted in 2021
 - 410 individual trees representing 116 accessions
 - Harvested largest crop at 707 pounds of fruit milled into 30 liters of olive oil
- Lateral.systems, a local AgTech startup
 - Water and atmospheric conditions monitoring platform in aquaponics and hydroponics systems
 - Pilot testing completed for technical readiness
 - Machine learning for smart monitoring system to catch problems before visible physical damage occurs



Making Progress

- Programs –
 - Examples:
 - Blueberry Field Day
 - Nursery Science Summit
 - IPM Trials
 - Endowed Position
 - Farm Droid
 - Chefs



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Farm of the Future?



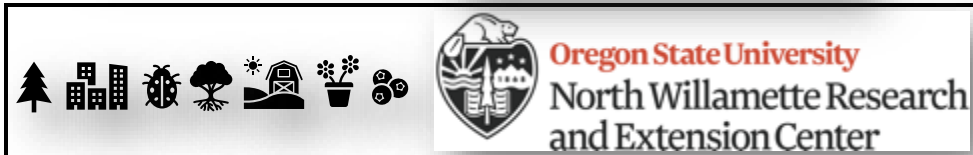
- Place
 - Conference/pavilion and 4G network
 - Berry storage/processing building
 - Modernization plan



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2026 Outlook

- Events
 - Ag in the Classroom 2026 Literacy Kickoff – Berries!
 - 65th Anniversary Celebration
 - NWREC-FIC Fall Fundraiser Dinner
- Outreach/Engagement
 - Meetings with industry, organizations, growers, commissioners, legislative representatives, researchers, leaders
 - “Your NWREC News”
- Collaborations
 - NWREC entrance re-design (Master Gardeners, Community Colleges, Industry)
 - Open-Source Lab (OSU, Community Colleges)
 - Smart Farm Expo (Departments, Industry, Organizations)



Thank You!



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