

Digger

MAY 2021

Growing minds

Oregon's horticulture programs develop talent and solutions for the future

Academics

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Scholarships

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May 2021 Vol. 65 No. 5 Digger



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Growing minds: A special issue

The nursery and greenhouse industry has a critical relationship with colleges and universities, including the programs that train future leaders, the researchers who drive change and improvement, and the scholarship programs that help students finance their education.

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Oregon's higher horticulture **education programs** feed the pipeline of nursery talent.

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On the cover: Luke and Owen van Lehman recording plant health measurements at North Willamette Research and Extension Center. PHOTO COURTESY OF OREGON STATE UNIVERSITY

On this page: Left: A Chemeketa Community College student trims a weeping conifer. PHOTO COURTESY OF CHEMEKETA COMMUNITY COLLEGE. Right: Nostoc on the nursery can cause serious safety hazards. PHOTO COURTESY OF OREGON STATE UNIVERSITY



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Kyle Fessler

Knowing what we don't

Some of the smartest people I know have one thing in common: They know what they don't know.

Years ago, I was fresh out of college and back in the industry, and I didn't have a clue how much I really didn't know. I had the opportunity to attend a multi-day conference put on by Northwest Farm Credit Service for young and beginning producers. Looking around the room, there were a hundred or so other young farmers who, like me, had grown up and worked on the farm nearly their whole lives, but were all still very green in the ways of agriculture and business.

We had the opportunity to hear from several great speakers that focused on ag economics and farm-family dynamics. One of the speakers was Dr. Dave Kohl, professor emeritus at Virginia Tech and "certified smart guy." He seemed to have more knowledge and information than the rest of us in the room combined. Where did all this information come from? Most of it comes from conversations with actual boots on the ground.

Dr. Dave mentioned that one of his best sources for information on economic indicators could be found at any given truck stop across the country: conversations with long-haul truck drivers. What are the backhauls like? How quickly can drivers find the next load? What is the price of that next load? These conversations with truckers help the economist frame his mindset, and paint a bigger picture of what is truly happening in real-time.

There is no end to the knowledge we can find if we really want it.

How often do we stop and ask the simple questions? Do we ask the questions because we have a desire to build a broader knowledge base of our craft? Or are we simply trying to solve the immediate problems of today?

Today, it's easier than ever to find the answers we crave. I've got a dozen or so contacts in my phone that know more about growing great plants than I could ever imagine. There's a 90% chance one of them has had the exact same problem I'm facing, or they know who to call to get the answer. If that doesn't work, there's probably several dozen (or thousand) videos online that can walk me through the issue, step-by-step.

There is no end to the knowledge we can find if we really want it. Do we have the humility to admit that we don't have all the answers, and are we willing to continually ask questions?

My biggest takeaway from that conference years ago is that we'll never have all the answers, but we need to strive to be continual, life-long learners. Whether the knowledge is gained through institutions, industry seminars, or a short conversation with the truck driver parked at our loading dock, we must continue to ask the questions that will help us be better growers and business operators. ☺



Calendar

Get the word out about your event! Email details to calendar@oan.org by the 10th day of the month to be included in the next issue of *Digger*.

APRIL 30

NEW VARIETIES SHOWCASE DEADLINE FOR FARWEST

The tier 1 submission deadline for the New Varieties Showcase at the 2021 Farwest Show is April 30. Submissions gain extra visibility in the July issue of *Digger* magazine, which is directly mailed to more than 7,500 green industry subscribers, and are also published at www.FarwestShow.com for online audiences with approved descriptions, logos, and exhibitor contact information. To qualify for approved entry, plants must exhibit new and improved qualities, such as greater hardiness, increased bloom time, more vibrant color, improved habit and/or better disease resistance. To be eligible, all plant selections must be new to the market for 2021 or 2022, available for order from a Farwest Show exhibitor, and have different attributes than plants currently on the market. Complete a submission form at www.farwestshow.com. Contact Zen Landis with questions at 503-582-2011 or zlandis@oan.org.

JUNE 5-13

PHILADELPHIA FLOWER SHOW

The annual flower show has been moved to an outdoor venue the first time in its history. Vendors and exhibits will be set up throughout Franklin Delano Roosevelt Park (FDR Park), South Philadelphia, Pennsylvania. The unique horticultural displays in the new space allow for as social distancing and the health benefits of being outside. www.phsonline.org

JUNE 10

DUFFERS CLASSIC

Save the date for the annual golf tourney, which will tee off at the Stone Creek Golf Club in Oregon City, Oregon. A benefit for the Oregon Nurseries' Political Action Committee (ONPAC), the event is a great way to reconnect with friends while supporting a strong nursery industry voice in Salem and Washington D.C. Sponsorships available. Check the OAN website, www.oan.org/duffers for updates and to sign up.

JUNE 23-27

CALIFORNIA SUMMER TRIALS

To stay in compliance with local ordinances and health official guidance to mitigate the spread of COVID-19, all guests must register to attend the individual sites of the 2021 California Summer Trials (formerly California Spring Trials). More than 20 breeding companies are set to showcase their new genetics with unique location dates and times. Group sizes will be limited, and some companies may offer private appointments before or after the event time. For more information about the trials, please contact Oster and Associates at www.growertalks.com/CaliforniaTrials.



AUGUST 18-20

FARWEST SHOW

The biggest green industry trade show in the West is set to take place at the Oregon Convention Center, 777 N.E. Martin Luther King Jr. Blvd. in Portland, Oregon. The official announcement to determine how the show will proceed will be made in early May. The trade show, produced by the OAN, attracts exhibitors and attendees from across the country and the world. OAN leaders are monitoring the health and safety protocols to ensure a safe and successful show for all. Log on to www.farwestshow.com for more information.

JUNE 25

DIGGER: FARWEST EDITION

Display ad reservations for the 2021 Farwest Edition of *Digger* magazine are due June 25. More than 11,500 copies of this extra-large edition will be distributed to *Digger* subscribers, as well as exhibitors and attendees of the Farwest Show in August. To reserve your space, contact Curt Kipp, OAN director of publications, at 503-682-5089 or email ads@oan.org.

JUNE 26

HORTLANDIA - TENTATIVE

The Hardy Plant Society of Oregon (HPSO) has tentatively scheduled the annual plant and art sale at the Portland Expo Center. The Hortlandia Committee of the HPSO board is monitoring the ever-changing conditions of the pandemic and will provide updates as the show dates come closer. If you have questions, email info@hardyplantsociety.org.

JULY 10-13

CULTIVATE'21

Presented by AmericanHort, Cultivate offers educational and networking opportunities and exhibits featuring technology, new products, services and plant varieties. Cultivate'21 is set to take place at the Greater Columbus Convention Center in Columbus, Ohio. The association is working with city, state, and

government officials, as well as the Greater Columbus Convention Center, on the proper protocols for having a safe in-person event. More details on these protocols will be available in the coming weeks. For information, visit www.cultivateevent.org.

JULY 27-29

PERENNIAL PLANT ASSOCIATION NATIONAL SYMPOSIUM

The Perennial Plant Association will host the 2021 Virtual National Symposium under the theme, "Celebrating Perennials: People, Place and Purpose." The hybrid format will include virtual speakers — from Italy, Britain, Brooklyn, Denver and more — and smaller, outdoor regional pop-up events around the nation. Topics will include trial reports, native plants, foliage, biodiversity, and garden design inspiration. Visit tinyurl.com/6bxddyk8 for more information.

AUGUST 13-15

NURSERY/LANDSCAPE EXPO

"Find Your Greatness at EXPO" is the theme of the 2021 Texas green industry trade show. Registration for the show is open. Safety precautions are being developed for attendees and exhibitors heading to the in-person show at the Henry B. González Convention Center in San Antonio, Texas! For registration and further details, go to www.nurserylandscapeexpo.org 



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Northwest News

OAN members and chapters are encouraged to send in relevant news items, such as new hires, new products, acquisitions, honors received and past or upcoming events. Email news@oan.org.



OSU updates three grower-focused guides

Oregon State University (OSU) has updated some of its guides that are commonly used by growers. The guides are free to download.

Phytophthora ramorum: A Guide for Oregon Nurseries by Hazel Daniels, Jennifer Parke, Jay W. Pscheidt, Chris Benemann has been updated with the most current Oregon Department of Agriculture policies and procedures regarding the pathogen that causes sudden oak death.

How to Do Regular Maintenance on Air Blast Sprayers to Ensure Proper Care for Specialty Crops by Brent Warneke, Jay W. Pscheidt, and Lloyd Nackley is a 9-page guide about routine air blast sprayer maintenance.

2021 Pest Management Guide for Tree Fruits: Hood River, The Dalles, White Salmon, Rogue Valley provides information on chemical pest control tools for apple, pear, cherry, and other fruit trees. The 80-page guide was co-authored by Ashley Thompson, Rick Hilton, Achala KC, Marcelo Moretti, Jay W. Pscheidt, Nik Wiman, Chris Adams, and Andony Melathopoulos.

Download the guides from catalog.extension.oregonstate.edu/



Faced with a shrinking budget, the horticulture program at Clackamas Community College is on the list of programs under review for possible elimination by the school board. PHOTO COURTESY OF CLACKAMAS COMMUNITY COLLEGE

CLACKAMAS HORT PROGRAM NO LONGER FACING BUDGET AXE

The horticulture program at **Clackamas Community College** in Oregon City, Oregon is no longer under threat of elimination.

The department was one of those considered for cuts or elimination, as the two-year school was faced with budget problems due to a decline in tuition revenue caused by the COVID-19 pandemic. However, Clackamas was able to access \$3.2 million in additional stimulus funds after the U.S. Department of Education allowed the school to backdate its tuition revenue loss to March 2020.

The department has an advisory committee comprised of industry representatives who rallied to the program's defense. Horticulture Department Chair Loretta Mills noted in an email to supporters that they played an important role in the positive outcome.

"I believe that our advocacy at last month's Board of Education meeting was very effective," she stated. "We now know that none of our programs are going to be eliminated. We will continue to be vigilant about protecting and growing our programs so that they remain

viable into the future."

Education lobbyists are advocating an additional \$30 million in community college funding from the Oregon Legislature to help close budget gaps at the state's 17 community colleges. Clackamas Community College is preparing for a \$1.4 million budget cut in the event that this increase doesn't come through.

Clackamas is looking at cost-saving strategies to address the college's structural deficit. Positions will be left vacant, food and travel budgets will be reduced, and printing and other utilities will be limited.

NW FARM CREDIT FORECASTS STRONG 2021 NURSERY PROFITS

The Northwest nursery and greenhouse sector continues to experience high demand and should expect strong profits in 2021, according to a first quarter market snapshot from **Northwest Farm Credit Services**.

"The industry continues to benefit from the pandemic's effects on consumers spending much more time at home," the report stated. "Drastic sales increases are expected to continue" ➡

More COVID-19 coverage online

Further updates on how the COVID-19 virus is impacting the greenhouse and nursery industry is online at www.diggermagazine.com/category/coronavirus. We are reporting on the most current information as of press time, but please check online for the most up-to-date information.



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Northwest News

The aftermath of the Riverside wildfire near Estacada, Oregon.

PHOTO BY THE OREGON DEPARTMENT OF TRANSPORTATION

through 2021 but may normalize in 2022 as society reopens. The housing market is very robust, which also supports continued sales.”

However, cost pressures due to increased regulation and a tight trucking market serve as somewhat of a counterweight to the strong sales, the report indicated.

Trucks are in high demand and short supply to accommodate the movement of medical supplies, goods for natural disaster areas, and other online orders. “In the past, buyers would sometimes cover, or help mitigate, increased shipping costs,” the report stated. “However, more buyers are reported to have put those shipping costs on growers’ shoulders, and multi-year contracts make it difficult for growers to increase prices to cover rising costs.”

On a positive note, freezing temperatures from a February ice storm did little damage to nursery stock other than large-caliber shade trees, the report indicated.

The lender is headquartered in Spokane, Washington, and has 44 branch locations throughout Oregon, Washington, Idaho and Montana. Download the report at tinyurl.com/vxuyca4f

STATE-RUN NURSERY CLOSURES LIMIT WILDFIRE RECOVERY

The closure of state-run tree nurseries a decade ago has contributed to the tree seedling shortage that’s impacting



Oregon wildfire victims, according to a report from *Stateline* (Philadelphia, Pennsylvania). The National Association of State Foresters conducted a survey that found eight states that have closed their operations in the past 20 years, with 29 states still operating facilities.

Much of the 63,000 acres of private land that was destroyed by the Labor Day wildfires remains unaddressed, but Oregon state law requires forest landowners to replant their property within two years of the event. State-run nurseries used to fulfill short orders of forest seedlings for private individuals. Today, the same groups are struggling to obtain seedlings from commercial growers, which typically grow large orders by contract years in advance. Small landowners own the largest share of the U.S. forests.

“We’re scratching our heads over this trying to address the need from the fire,” said Glenn Ahrens, a forester with the Oregon State University extension service.

Log on to tinyurl.com/4spawcmd to read the full story.

OREGON, WASHINGTON MAY END OVERTIME EXEMPTION

Legislatures in both Oregon and Washington are looking at ending the longtime agricultural exemption for overtime pay requirements — an exemption that is allowed but not required under the federal Fair Labor Standards Act

In Oregon, farm advocates including the Oregon Association of Nurseries are opposing House Bill 2358, which would require that overtime be paid to hourly workers exceeding 40 hours in a seven-day work week.

Supporters say farmworkers should be treated like any other hourly worker, especially considering that it is difficult work, but farmers say they need the flexibility during harvest and shipping season. They add that workers appreciate getting extra work during these times and depend on the income, but it won’t be affordable for farmers at time-and-a-half.

“This legislation puts our growers squarely between a rock and a hard place,” said OAN President Kyle Fessler

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of **Woodburn Nursery and Azaleas Inc.** (Woodburn, Oregon). “The rock is the lack of labor supply, and the hard place is increased costs this legislation would impose. If we can’t hire and we can’t add hours to existing employees, we’re going to have an impossible time producing and shipping to meet market demands.”

Wes Bailey, general manager of **Smith Gardens** (Aurora, Oregon) and a member of the OAN board, testified against the bill at a March 29 legislative hearing. He mentioned the many layers of added expense the state government has imposed on farmers, including higher wages, paid family leave, a corporate activity tax and more.

“I don’t talk about one bill,” he said. “I talk about the cumulative effect of all of them. You keep adding layers and layers and layers to the cake, and there’s only so much that we can eat at one time.”

Supporters of the Oregon bill have proposed phasing in the requirement, such that overtime will be required for hours more than 50 one year, then 45 the next, and finally 40. They have invited the agricultural community to discuss solutions and compromise.

Six states have passed legislation requiring agricultural overtime, but it’s not a blanket rule like is proposed in Oregon. All have provisions to provide some flexibility.

In Washington state, the state Senate passed Senate Bill 5172, which phases out the agricultural overtime exemption, on March 9. The state House followed suit in April. Under it, overtime will be required after 55 hours starting in 2022, after 48 hours starting in 2023, and after 40 hours from 2024 onward. At press time, the bill needed to go through conference committee for final passage and be signed by Gov. Jay

Inslee, which was expected to happen.

A state Supreme Court decision requiring overtime pay for dairy workers in Washington somewhat forced the Legislature’s hand.

OAN REMAINS ACTIVE ON WATER ISSUES

Water is the lifeblood of nurseries. That’s why the Oregon Association of Nurseries is active on several bills in the 2021 Oregon Legislature potentially affecting growers’ water supplies.

House Bill 3166 would charge a committee with studying and making recommendations to improve water measurement in Oregon. The OAN is hopeful that with better water measurement, the Oregon Water Resources Department will be better able to manage the resource for all. >>




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“Water is uniquely complex,” OAN Executive Director Jeff Stone stated in testimony before the House Water Committee, which is chaired by Rep. Ken Helm (D-Beaverton). “Water is influenced by complicated hydrological and geological mechanisms that affect surface and groundwater, and Oregon’s administrative and legal systems attempt to regulate and capture information about this dynamic system.”

“Data that is collected from water users is only one part of a basin’s water story and one evaluation tool. Stream gauges, OpenET, and other water technologies improve our understanding of water at the basin scale. We believe that a successful measurement and reporting bill will recognize the role of water user data as well as the importance of stream gauges, OpenET, and other water management technology.”

The OAN also signed on to a let-

ter asking legislators to fund a facilitated workgroup on the Willamette Basin Reallocation for water.


Such a process would address the future of the water impounded by 13 dams within the basin, and how it would be allocated to different users including irrigation, municipal supplies, industrial users, recreation, fisheries and other uses, while ensuring adequate in-stream flow.

“While the Willamette Basin may be viewed as water-rich, there are a myriad of critical and complex issues that need to be addressed before on-the-ground implementation of the Willamette Reallocation occurs,” the letter stated. “These issues necessitate a structured, facilitated workgroup process with diverse stakeholders and impacted agencies, including but not limited to the Oregon Water Resources Department and Oregon Department of Fish and Wildlife.”

These are just two of the water bills where OAN is providing input. House Bill 2144 addresses water storage rights, House Bill 3091 addresses transfers of stored water, House Bill 3242 would require the state to develop a report regarding the cost to study each of the state’s basins, and House Bill 2142 would increase fees that support Water Resources Department functions. The association supports the first two and is willing to support the last one because nurseries rely on the department’s services as they make use of their water rights.

VIRGINIA GARCIA CLINIC LOOKS TO IMMUNIZE FARMWORKERS

Nonprofit healthcare provider Virginia Garcia Memorial Health Center is hoping to vaccinate 30,000 immigrant



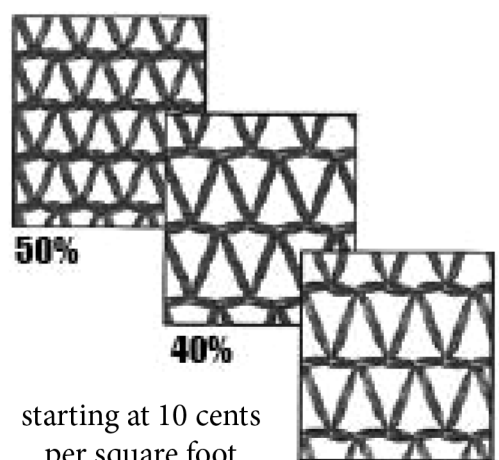
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Rosa 'Graham Thomas', a popular English rose bred by David Austin, and are in short supply for the 2021 season.

PHOTO COURTESY OF WIKIMEDIA

the time the article went to press, a few varieties were available from **AI's Garden Center** in Sherwood and Woodburn, and Heirloom Roses in St. Paul had a few options available for online shoppers.

farmworkers and their families by July, according to a report from *Capital Press* (Salem, Oregon). The clinic has facilities in Hillsboro, Cornelius, Beaverton, Newberg, and McMinneville, but they has converted a Winnebago into a mobile testing site to reach migrant workers at work. The Reponse Team driving the mobile site has already tested more than 12,000 farmworkers in Washington and Yamhill counties. They are working created a mobile mass vaccinations.

Go to tinyurl.com/56zuvh48 to read the full story.

2021 FACES SHORTAGE OF DAVID AUSTIN ROSES

The resurgence of home gardening has led to a shortage of David Austin roses this year, according to a report from KOIN (Portland, Oregon). Initially bred in Shropshire, England, American-grown roses are in such short supply that only 30 garden centers have new product to sell. At Cornell Farm, the popular brand is nearly sold out and preorders are almost all picked up. **Portland Nursery**, which offers a collector's rose for the annual Portland Rose Festival, is also sold out. At

SBA DISASTER LOANS AVAILABLE FOR FIVE COUNTIES

The U.S. Secretary of Agriculture declared a disaster on April 2, 2021 due to drought in Union County, according to a release from the agency. In response, the Small Business Association (SBA) is offering small nonfarm businesses in Baker, Grant, Umatilla, Union, and Wallowa counties low-interest federal disaster loans. Qualifying organizations may receive loans up to \$2 million to meet their financial obligations or expenses due to the drought. The loans have a 3% interest rate for businesses with a >>






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Announcements

EASON HORTICULTURAL HIRES VICE PRESIDENT AND COO

Mike Pezzillo has been appointed Eason Horticultural Resources (EHR) vice president and chief operating officer (COO), according to a statement from the company. He joins the company with 26 years of industry experience and will work with EHR's Plant Division to lead the nursery operations.

Pezzillo was previously the vice president of McHutchison nursery divi-

sion. He earned a Master of Business Administration from Montclair State University and has a bachelor's of science in plant sciences from Cornell University. Visit ehrnet.com for more information.

DRAMM HIRES SUPPORT AND SERVICE MANAGER

Josue Preza has been hired as a support and service manager for Dramm Corporation, according to a release from the company. He will serve on the DRAMMwater Team along with a project manager and engineering team. He will help customers with the installation, commissioning, and support of Dramm Complete Water Management projects. He has more than 20 years of experience



from previous work at Thermo Fisher Scientific and Texas Instruments.

NURSERY GUIDE ADDING CATEGORY FOR HOUSEPLANTS

Up to now, there's been no category on NurseryGuide.com for houseplants, but that's about to change. With houseplants now in high demand, a long-overdue houseplants category is being added to the site, and to the Specialties and Seasonal Plants section of the book. Subcategories for the various plants will be added as requested and needed.

Members who offer houseplants wholesale are encouraged to add them to their listings. To do this, please contact Beth Farmer at bfarmer@oan.org or Curt Kipp at ckipp@oan.org for assistance.

HRI ACCEPTING RESEARCH PROPOSALS FOR 2022 CYCLE

Horticultural Research Institute (HRI), the foundation of **AmericanHort**, is now accepting research project proposals for the 2021 grant cycle. Grant applications are due no later than June 1.

Each year, the institute funds projects that are designed to improve green industry efficiencies and profitability. The program funds projects that are designed to improve green industry efficiencies and profitability. Grants of between \$5,000 and \$35,000 may be awarded to research projects that strategically focus on plant benefits, innovative solutions, consumer preferences, and business solutions. Research projects are most likely to be funded if they have defined outcomes, provide practical advice for businesses and offer a demonstrated return on investment.

Read the call for proposals for additional details on www.hriresearch.org/research-application-and-requirements. ©

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Growing minds

PART 1

The foundation of learning

Oregon's higher horticulture education programs feed the pipeline of nursery talent

BY TRACY MILLER

WHEN RYAN CONTRERAS, associate professor at Oregon State University (OSU) in Corvallis, Oregon, talks to students with an interest in plants and the horticulture program, one point inevitably rises to the top.

"I can guarantee you a job in the nursery industry," he tells them. "There is so much advancement and opportunity coming out of college."

The nursery industry has a compelling need for new talent, and several higher education institutions in Oregon are training the next generation of horticulturalists for a variety of careers.

This article provides an overview of three college-level degree programs in the state and the approach, facilities and requirements that have been developed for teaching, training and connecting undergraduate, graduate, and returning adult students in nursery greenhouse and production.

Oregon State University

According to Contreras, outside of the horticulture research undergraduate degree that is often the program of choice for individuals who would pursue graduate studies, the undergraduate degrees at OSU (see chart) attract a wide variety of students.

"Basically, the core of our degree programs does a good job of training students wherever they want to go," Contreras said.

The curriculum is flexible to various fields and career direc-

tions. It provides the fundamentals of plant nutrition, growth and life cycles, pruning, irrigation, propagation, greenhouse and field growing, and more. Enrolled students have access to labs, greenhouses, the Corvallis Farm Unit, and a group of OSU-owned farms and labs. Each provides hands-on learning opportunities and includes — among other things — a 90-acre vegetable crops farm, a 115-acre planting and field laboratory, and a 14-acre vineyard.

A mixture of coursework gives students a taste of every level of work in the industry. For example, a student interested in growing and marketing flowers would seek specific classes on floriculture. In other cases, floriculture may not even be on another student's radar. The range of topics in the core curriculum prepares all graduates to be viable job candidates in the industry from various entry points.

"The most valuable skills students pick up are problem-solving ones," Lloyd Nackley, assistant professor of nursery and greenhouse plant production at OSU, and nursery crops research leader at the North Willamette Research and Extension Center (NWREC), said. (More than 50 full-time and part-time professors, researchers and extension agents make up the faculty in the OSU Horticulture Department.)

Students learn how to handle everyday management challenges like they were on the job. Program graduates will have grown plants to a specific grade or standard in a greenhouse >>>

The foundation of learning

Master's students Adigun McLeod (left) and Cara Still (right) conduct flow cytometry analysis of plant cells to determine DNA content, or genome size, as part of breeding research in the Contreras Lab.

PHOTO COURTESY OF OREGON STATE UNIVERSITY

— from propagation to the final product. They will have practiced using fertilizer, substrates, and heating or cooling to manipulate their products.

Although there would be thousands of plants in an actual nursery setting, the small-scale growing assignments — with 100 plants produced in 10 unique ways — teach students practical skills for their first jobs and internships.

Students can earn up to 12 credit hours for 360 hours they work on the job as an intern. Each internship is individualized for both on-campus and eCampus learners. The eLearning program is especially attractive to veterans and other individuals going through a career change.

“Internships are the most important thing we require all students to do,” Contreras said.

It's important enough that the department is in the process of bringing in a dedicated internship coordinator.

“Internships provide further introduction to production, plant pathology, integrated pest management and farm growing,” Nackley said.

Actual, on-the-job training during a student's junior and senior year brings home how it all works. The internships expose students to the broad scope of job opportunities in the marketplace and give them consistent access to several business leadership levels throughout their four years at OSU.

Students also experience eye-opening site visits to nurseries; unique guest lectures by regionally-based OSU alumni; and research projects that faculty and instructors developed in direct partnerships with United States Department of Agriculture-Agricultural Research Service (USDA-ARS) industry advisors. Specifically, there is a nearby National Clonal Germplasm Repository and its Horticultural Crops Research Unit on campus.

OSU is rated an R1 university. It meets the 10 activity indicators in research activity and expenditures set by the Carnegie Classification of Institutions of Higher Education. As a research institution, the Horticulture Department maintains a close



relationship with the USDA, which mentors graduate students and hires graduate and undergraduate students full-time and part-time in summer and year-round.

The OSU and USDA nursery working group (www.diggermagazine.com/osu-and-usda-nursery-working-group) includes 16 members from the OSU faculty and four staff from the USDA. They work together to provide research-based findings to advance nursery practices and benefit producers in Oregon.

In all those ways — research, proximity to nursery operations, direct working relationships with the nursery industry — an OSU student experiences how the industry is facilitated, both regionally and nationwide.

“I think that our level of connection with the nursery industry and our level of preparation for nursery-specific jobs really benefits students who want to stay in the field. They are employable upon graduation,” Nackley said.

Chemeketa Community College

Of Oregon's nursery and greenhouse industry sales, 40% comes from businesses

in Chemeketa Community College's service district of Marion, Polk and Yamhill counties.

The Salem-based Horticulture Department has focused its efforts to provide education, training and job opportunities in this important sector of the Oregon job market.

The college opened a brand-new 5-acre Agriculture Complex this spring, ready for students to plant their first crops. Although cost originally prohibited the addition of a greenhouse, a donation received in January from **Northwest Farm Credit Services** funded a full, working greenhouse to this state-of-the-art educational hub. It has indoor and outdoor classrooms, labs, garden/farm demonstration fields, an ornamental yard, soil labs, and a beneficial insectary space.

Larry Cheyne, interim director of Agricultural Sciences and Technology, explained that this new facility gives students access to the tools and technology necessary in horticulture production. Chemeketa students can now learn how to produce a wider variety of products than they could with their previous set-up. It

also provides an opportunity for students to partner with local businesses and experience hands-on plant propagation, automation, HVAC systems, greenhouse and hoop house growing, plant trials and more.

As part of the complex, the half-acre Woody Ornamentals Demonstration and Learning Lab offers specific opportunities for students to learn and interact with industry members. With initial funds from the J. Frank Schmidt Foundation, a donation from Morgan Stanley Smith Barney and a nearly \$274,000 award received in June 2020 from the National Institute of Food and Agriculture (NIFA), the new lab enables the horticulture program to expand its workforce development and education program. The college will provide training for the industry-accepted practices of woody ornamental production. The space is divided into three growing areas: ball and burlap, bareroot and pot-in-pot.

Joleen Schilling, program chair of the Horticulture Department, explained that workforce development helps individuals grow in their current positions on the job. The project was designed with a twofold purpose.

“The idea was to create an opportunity for students to get hands-on experience and as well be valuable to the industry; to simultaneously serve the industry with data from trials.”

Students get real-time training in crop management, soil requirements, nutritional management, water requirements, pest management, pruning and harvesting. Later in the program they learn marketing, sales and delivery.

“Honestly, the experience moves from start to finish,” Schilling said.

The NIFA grant also provides for a full-time technician who works with students at the lab and with the industry advisors to identify specific species of crops for planting, trialing and evaluating.

The funds are also being used to develop an irrigation certificate and a nursery apprenticeship program. It will add to the existing crop health certificate program, which focuses on integrated >>

College horticulture programs in Oregon

Oregon State University

Corvallis, Oregon and various locations

Contact: **LeeAnn Julson** — LeeAnn.Julson@oregonstate.edu

<https://horticulture.oregonstate.edu/>

Enrollment: **225 students**

Courses offered: **62 for-credit undergraduate courses**

Degrees offered:

- **Horticulture Bachelor of Science (BS)**

Options include:

- **Ecological Management of Turf, Landscape, and Urban Horticulture**
- **General Horticulture** (Online)
- **Horticultural Research**
- **Plant Breeding and Genetics**
- **Sustainable Horticultural Production**
- **Therapeutic Horticulture**
- **Viticulture and Enology**

- **Horticulture Master of Science (MS)**

- **Horticulture Graduate (Ph.D.)**



Chemeketa Community College

Salem, Oregon

Contact: **Joleen Schilling** — Joleen.schilling@chemeketa.edu, 503-399-5150

<https://www.chemeketa.edu/programs-classes/program-finder/horticulture/>

Courses offered: **29 credit-bases courses**

Degrees offered:

- **Horticulture Associate of Science (AS)** (transfer degree to OSU)
- **Horticulture Associate of Applied Science(AAS)**



Clackamas Community College

Oregon City, Oregon

Contact: **April Chastain** — april.chastain@clackamas.edu, 503-594-3292

<https://www.clackamas.edu>

Students: **300 students**

Courses offered: **63 credit bearing classes** plus non-credit workshops and continuing education units (number varies)

Degrees offered:

- **Horticulture Associate of Science (AS)** (transfer to OSU),
- **Horticulture Associate of Applied Science (AA)**
- **Landscape Management Associate of Applied Science (AAS)**

Option:

- **Arboriculture**

- **Organic Farming Certificate of Completion**
- **Horticulture Certificate of Completion**
- **Landscape Practices Certificate of Completion,**
- **Irrigation Technician Career Pathway Certificate,**
- **Plant Health Management Career Pathway Certificate**



The foundation of learning

Students learn the process of planting by flat filler in a lab setting.

PHOTO COURTESY OF CLACKAMAS COMMUNITY COLLEGE

pest management, biological control agents and plant problem identification. Students can participate in the program while working toward either a two-year associate of science (AS) degree or associate of applied science (AAS) in horticulture. The AS program was recently approved in the last two years.

“The new [AS] degree was designed to help students who want to transfer to OSU and major in horticulture,” Schilling said. “The workforce skills are limited; its intention is for students to get the general education courses and courses in horticulture that transfer seamlessly to OSU. When they get there, they are at junior standing.”

The AAS degree provides a good introduction and overview to horticulture, and specifically nursery greenhouse. “Students gain tangible, real-world skills to enter into the workforce at the technician level, where they can usually advance pretty readily,” Schilling said.

Students enrolled in the program secure growing contracts in the industry, work with seed producers, grow the material and do the marketing. Contract assignments are varied and have included such projects as producing bedding plants for the City of Salem parks department, fuchsias for Garland Nursery, and vegetable starts for the community gardens and youth farm of Marion Polk Food Share.

The AAS is focused on contextualized applied learning, where students take what they learn in classes and labs and then apply their skills during their internships. In addition to field trips to nurseries and industry guest speakers on campus, Cheyne also explains the value of Cooperative Work Experiences (CWE). They are internships that involve completing documented, measurable workplace objectives and career-related assignments to earn college credit. He considers them a third way for students to connect with industry contacts, adding project management skills, problem-solving, leadership, and team building to their technical skills.

Throughout their studies, students begin to identify career directions, conduct



informational interviews with nursery industry employers who come to campus, and engage in other career development activities. Internships usually occur at the end of the second year.

“Because of the timing, many of the students who do an internship at the end of their degree end up getting hired,” Schilling said.

Chemeketa is the first college in Oregon recognized as a Hispanic-Serving Institution (HSI), with enrollment of Hispanic students in certificate or degree credit programs reaching 25% in 2015.

“It’s definitely an honor to be an HSI which provides access to some research and supports to enhance students in their pursuit of a degree,” Cheyne said. “Where we have focused on is recruitment and retention.”

The college has reached out to high school campuses and partnered with on-campus programs that have a large Latinx population — such as in Woodburn and Salem — to support student success in pre-college work.

“Our Intro to Horticulture course is currently available at two high schools,” he said. “And we plan to have some of our horticulture students be ambassadors for the program.”

Chemeketa has also conducted career

days and offered guest lectures targeted to Latinx students. Schilling believes these events show the career opportunities in horticulture for these students.

Clackamas Community College

Flexibility is built into the horticulture program at Clackamas Community College (Oregon City, Oregon) in multiple ways. The core program allows students to start their coursework and figure a particular career direction over time. Some students begin their studies, get hired for a job and then finish the degree on their own schedule. The college offers a number of degree types to meet the needs of all students.

The main degrees in the Horticulture Department are three, two-year programs: the Horticulture associate of science (AS), to prepare for transfer to a four-year bachelor’s degree program; the Horticulture associate of applied science (AAS); and the Landscape Management associate of applied science (AAS) including an Arboriculture option; and a one-year certificate in Organic Farming.

The one-year Horticulture Certificate of Completion is essentially the first year of the two-year program, and can be a good fit for individuals who have job experience or a four-year degree, and >>>



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The foundation of learning

A Clackamas Community College student measures pH and EC in a fertilizer solution

PHOTO COURTESY OF CLACKAMAS COMMUNITY COLLEGE

who are looking to make a career change.

April Chastain, department chair of Horticulture at Clackamas Community College and the landscape management lead, considers the one-year certificate appropriate for students with no knowledge of horticulture looking to gain an entry-level position.

Most of the students — about 98% — at Clackamas are enrolled in the AAS program, according to Frank Kilders, one of the department's four full-time faculty members and the nursery/greenhouse lead. It's common for students to get to the one-year point and then choose to continue and earn the two-year AAS. Students can develop a specialty as they go through the two-year AAS.

The Horticulture Department, which includes 21 part-time instructors, offers several certificate programs (see chart) that require 45 or less credits. The course credits are stackable — students can apply those degree hours to a two-year AAS. Although there is currently no certificate in propagation, Chastain said the program has a strong focus on it. So much so, the college has a special industry advisory committee exploring a move toward a specific certificate or degree program in propagation, according to Kilders.

A general advisory committee made up of industry representatives provides important input and helps shape the Horticulture Department programs. The committee provides a connection to the industry, aligning the degrees and certificates to industry standards — defining and enumerating appropriate shifts and expansions where and when necessary.

“The horticulture industry supports our department tremendously, donating equipment, plants and their time to the program,” Kilders said.

Training in production and mechanization for students includes access to such equipment as a flat filler, a transplanter and a watering tunnel, and programmable environmental control technology. Clackamas has a farm site, several gardens, a hoop house and four greenhouses — two of which run the entire year and are often the site for classroom lectures.

“Students gain a lot more knowledge



when learning in a practical setting,” Kilders said. “We are ever-changing the curriculum to align to the necessities that the horticulture industry has.”

Chastain believes students are looking for an education that combines the technical aspect of horticulture, the science, as well as business knowledge. This includes plant production planning, inventory control, logistics, marketing, transportation systems and suppliers — big picture problem-solving combined with plant knowledge and business know-how.

“At Clackamas, we have qualified, practice-oriented instructors who have been in their fields for a number of years,” Kilders said. “They are bringing this strength.”

One way that students at Clackamas are introduced to nursery operation problem-solving is through the Horticulture Department's annual plant sale. It is usually held a week before Mother's Day. Leading up to the sale, students practice planning and production through direct action: growing perennials, herbs, annuals, vegetable starts, hanging baskets and native plants, and then selling the products of their learning. In one year, 14,000 plants were produced. The day of the sale, students don matching aprons and serve as many as 500 customers.

“We'll have people lined up around the block, and students get an opportunity to see what it's like to run a retail operation,” Chastain said.

Another way the industry connects with the Horticulture Department is by requiring students to complete a minimum of 6 credits (180 working hours) of CWE for the two-year AAS (3 credits for a certificate; 12

credits for arboriculture).

“CWE makes your education more valuable and relevant — to let your experience draw from work,” Kilders said.

Student placement for CWE can be dependent on a specialty they are interested in, whether it is arboriculture, landscape, nursery, greenhouse or organic farming. Kilders recommends taking CWE as soon as possible after entry into the program. Paid positions can count toward CWE credits.

“There are a lot of success stories with CWE,” Kilders said. “The majority of students I teach get offered a job while they are doing their CWE.”


Meeting future needs

The horticulture programs at higher education institutions in Oregon are closely aligned — analyzing the continuously changing needs of the industry, adjusting the curriculum so students receive appropriate information; bringing more technology into classrooms, greenhouses and school farms; and developing close connections to industry for input on academics, on-campus involvement and off-campus CWEs.

“We are in a generational change, and the industry needs qualified personnel to meet the challenges of growing in the 21st century,” Kilders said.

And that's what these Oregon programs are doing: training students for successful transition from school to the work place. ☺

Tracy Ilene Miller is a freelance writer and editor who covers several topics, including gardening. She can be reached at tmillerwriter@gmail.com.



Growing minds

PART 2



The framework of the future

Industry-funded scholarships provide essential support for tomorrow's leaders

BY MITCH LIES

IT MIGHT NOT seem like much, but for **Justin Schulze**, plant breeder for Bailey Innovations, a division of **Bailey Nurseries**, the money he was able to cobble together through college scholarships was critical to launching his career.

“Those scholarships can allow us to go to something like Farwest [Show], meet up with other industry people, and that can make a big difference when you are trying to start a career,” Schulze said, “Making those connections is really important, and there is not always funding for grad students to go to trade shows.”

Schulze is one of numerous scholarship recipients from the Oregon Association of Nurseries (OAN) now working in Oregon agriculture, including many working directly for Oregon nurseries. OAN has been awarding scholarships since the 1970s through the Oregon Nurseries Foundation.

Schulze, who is married with two children, said he was fortunate to have his tuition covered but found it a struggle to make ends meet while pursuing his master's degree in horticulture at **Oregon State University**.

“I was applying for every scholarship that I could find to just fill the gaps in our financial situation,” Schulze said. “Every

little thing makes a difference.”


He applied with Bailey Nurseries before obtaining his master's degree in horticulture and started with the company just weeks after graduation.

Today Schulze is involved in breeding small trees and shrubs and End-of-Summer® hydrangea for Bailey Innovations in Athens, Georgia.

“It feels good to be working in the field I got my degree in,” he said. “When I had my undergraduate degree, I worked jobs where I didn't feel like I was applying what I had learned. Now that I completed grad school and got the degree, I am working exactly at what I studied, and it feels good.”

A source of pride

Anne Marie Richards, who joined her family's business, **Motz & Son Nursery** in Portland, after graduating from OSU in 2016 with a degree in agriculture science, received a scholarship through the Oregon Nursery Foundation in 2015.

The money was helpful, she said. Equally rewarding was the pride the scholarship brought her family. “It made my family 

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The framework of the future

Previous page: Justin Schulze inspects products at Bailey Innovations in Georgia.

PHOTO COURTESY OF BAILEY

Top: Anne Marie Richards currently works through many job duties at her family business, Motz & Son Nursery.

PHOTO COURTESY OF MOTZ & SON NURSERY



proud that the industry was recognizing my efforts to join the family business, that the industry was giving me an encouragement going into my new venture in life," Richards said.

Richards wears multiple hats at the nursery, including managing the business's spraying and integrated pest management, managing the company's human resources division, trucking, and performing inventory management and production scheduling.

Knowledge and insight she gained in soil science and nursery management classes have been particularly useful over the years.

"Probably one of the biggest lessons I learned while at OSU is how to work with people," she said. "I think in the ag science program, you do more of that than in other programs, just because there is more lab work and field work."

Richards today is enrolled in the masters of business administration program at the University of Portland and expects to have her graduate degree this month.

Signe Danler, a 2012 scholarship recipient, was in her 50s when she secured an Oregon Nursery Foundation scholarship to help fund a career change into the horticulture field.

Danler said she always had an interest in plants and eventually secured a master's degree in agriculture science that she

Justin Schulze earned a master's degree in horticulture, and now works with the breeding program at Bailey Innovations. PHOTO COURTESY OF BAILEY

Bottom: Signe Danler was able to complete her education through the scholarship assistance. PHOTO COURTESY OF SIGNE DANLER



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used to land a position as instructor in the Master Gardener Online Program at OSU. The program, which had been dormant for two years before she revitalized it, has been hugely popular during the COVID-19 pandemic, at one time even crashing the OSU online system when a vegetable class went viral last year.

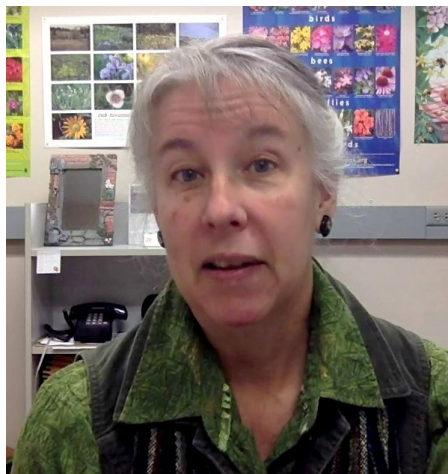
Danler, who had one son living at home while she was pursuing her degrees in horticulture, said obtaining scholarships was vital in her ability to pay for school.

"I am quite sure I wouldn't have been able to do it otherwise," she said.

Twenty scholarships a year

The OAN awards 20 scholarships a year, up from 19 a year ago after the Arthur

Spada family recently created a scholarship. Between 15 and 20 students are awarded each year, with some qualifying for multiple scholarships. Awards range from \$500 to \$1,500 per scholarship.



A mix of donations from OAN chapters and association funds fills the foundation's coffers.

Jennifer Satalino, director of The College Place-Oregon, an organization that helps match students to scholarships, said scholarships provide several benefits to students.

"First, there is the money, and anytime someone is giving you money to go to college, that is money that you don't have to save, you don't have to earn and you don't have to pay back," Satalino said.

"Second, there is that recogni-





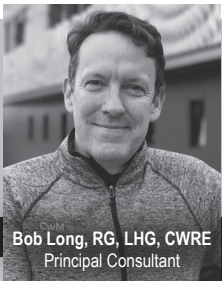
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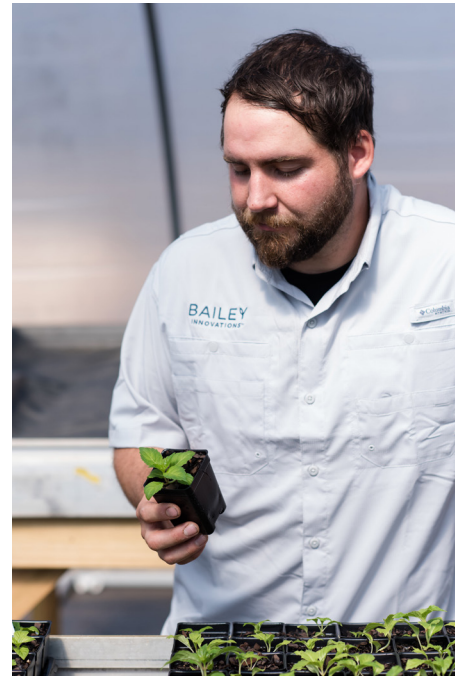


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tion. It gives you bragging rights and it makes you feel good that someone who is not related to you has recognized your value and your work, and that can be huge,” she said.

“And some scholarships, like the Ford Family Foundation, also have academic coaches and life coaches, and they do leadership conferences for the students that they are funding,” she said. “So, there can be a lot of other benefits.”

“But anything that keeps you from borrowing student loans is a fantastic thing,” Satalino said. “I think it is really important for every student to look for scholarships.”

Oregon is unique in that the state has a sort of clearing house for college scholarship applications. The Office of Student Access and Completion works to allow students to fill out one form that will enable them to apply for up to 40 scholarships.

“Most students won’t find 40 that are relevant to them,” Satalino said. “But if you can find five good scholarships to apply for on OSAC, that is great.”

Applying through OSAC also is a good primer for applying for other scholarships,” Satalino said. “After you get through that, everything else seems a lot easier.”

Also, a simple Google search for scholarships can bring up some viable options.

“I would just pull up the Google search engine and type in horticulture scholarships and open anything that catches my eye,” she said.



Previous page: Justin Schulze monitors new growth. PHOTO COURTESY OF BAILEY

Top: Anne Marie Richards stands near heavy duty equipment at Motz & Son Nursery.

PHOTO COURTESY OF MOTZ & SON NURSERY

Typically, the most lucrative scholarships available to students come directly from a college or university.

“There are some really generous private scholarships out there,” she said, “especially here in Oregon. But they are

the outlier. Usually, you are going to get a lot of funding directly from the college or university. So, it really makes sense for students to check out the scholarships available to them at the institutions they are interested in, and to know the applica-

tion process and know the deadline.”

“Then you want to start looking at local scholarships,” she said.

Specialty scholarships provided by organizations like the OAN can be valuable, in part because application pools are smaller than general scholarships, which narrows the competition for the scholarships.

Variety of qualifications

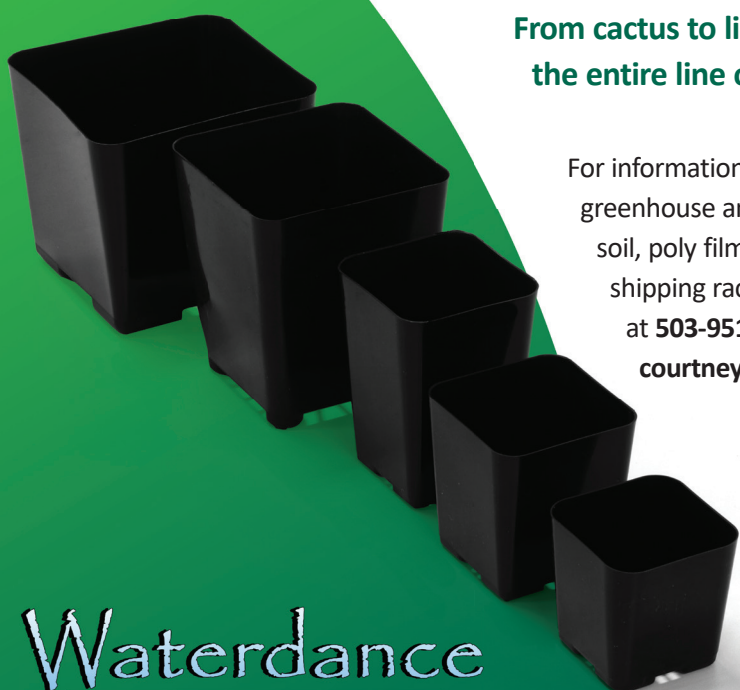
Scholarships have a variety of qualifications, Satalino said. Some are merit based, some need based. Some require high grade point averages. Some, like the Ford Family Foundation scholarships, don’t.

“The thing about scholarships is that their criteria vary by who is donating money,” Satalino said. “Kenneth Ford, who founded Roseburg Lumber Products, was not the valedictorian of his graduating class, and he wasn’t the lowest >>>

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scoring student. He was just in the middle. So, when he set up the scholarship program, it wasn't for overachievers or underachievers, it was just for good solid kids who are going to grow up and become leaders in their community."

Scholarships available through the Oregon Nursery Foundation have several different criteria, according to Stephanie Weihrauch, director of finance and administration for OAN, with one constant.

"Our goal is to provide scholarships for those who are going into the nursery industry," she said. "So, you have to be in a field related to horticulture. We have some in landscape design. We have some students majoring in business who are children of OAN members and plan to take over the family business. They qualify as well."

The foundation typically fields around 30 applicants, she said. Last year, 27 applied.

"These and other scholarships available to students interested in our industry are extremely important resources," Weihrauch said. "We in this industry want to nurture this interest in horticulture and nursery management and want to help them to be able to get that education."

People interested in donating to the scholarship program at the Oregon Nursery Foundation, can go to www.oan.org/page/onfdonate.

More information on The College Place-Oregon can be obtained by going to www.ecmc.org/students/tcp-oregon.html. Satalino can be reached at jsatalino@ecmc.org.

Mitch Lies is a freelance writer covering agricultural issues based in Salem Oregon. He can be reached at Mitchlies@comcast.net.



Growing minds
PART 3

The grass roots of research

The nursery industry plays an important role funding and vetting beneficial research projects

BY CURT KIPP

UNIVERSITIES AND COLLEGES, in Oregon and elsewhere, don't merely provide nurseries and greenhouses with well-trained, knowledgeable and conversant employees.

They also provide research-proven knowledge and best practices, so growers can produce a better crop and run a more profitable business.

These institutions of higher learning work hand-in-hand with growers to solve production problems, learn about market behaviors, and even develop new plant varieties that perform better in the landscape, resist pests or diseases, or solve other troublesome issues.

Dr. Ryan Contreras, a professor of ornamental plant breeding at **Oregon State University (OSU)**, takes his cues on what to work on, directly from the industry. "I don't breed plants for me," he said. "I breed plants for the nursery industry. I try to be responsive to what they ask for."

Each year, he convenes an Ornamental Crop Advisory Committee to talk about the industry's research needs. It's comprised of four OSU scientists and four nursery industry members, and Contreras gets additional feedback at an annual field day, held every June.

Norway maple (*Acer platanoides*) is one of the priorities that his group identified. It is a strong alternative to trees like

American elm and ash that have experienced disease/pest issues and can't be used as much anymore. It tolerates air pollution, heat and drought, and grows well in a variety of soils

The problem is, it's been deemed invasive in New England, and states such as Connecticut and Delaware have banned it as a result. Enter Contreras, and his research team's efforts to breed sterile Norway maple triploids. They're hoping to come up with a sturdy street tree that looks great, performs well in the environment, and won't be deemed invasive.

But of course, that takes time and money,

"Developing a sterile Norway maple doesn't happen overnight — it takes decades," he said. "The commitment to keep funding (research) is commendable."

Funding the research

The work of university researchers and others is supported by a loose amalgam of state and national funding mechanisms, which are both public and private. Together, they provide close to \$10 million worth of funding for nursery and greenhouse research funding at various institutions across the United States.

Ken McVicker works at **Woodburn Nursery and Azaleas Inc.** (Woodburn, Oregon) and serves as president of the Horticultural Research Institute (HRI), which funds nursery >>

The grass roots of research

Previous page: The new agricultural hub at Chemeketa Community College is currently under construction.

PHOTO COURTESY OF SWINERTON

and greenhouse research projects nationally. He believes the mission is important.

“We are a powerful industry,” he said. “We want to stay relevant and robust, and provide members with the resources they need to move forward and be profitable.”

HRI is an affiliate of AmericanHort, the national nursery and greenhouse trade association. It draws upon an \$11 million endowment provided by individuals, corporations and associations to fund industry research. For 2021 alone, HRI awarded \$364,000 in funding for 12 projects being conducted at various research universities across the country.

Each grant application that HRI receives is evaluated against a set of four research priorities, or “pillars,” as McVicker calls them. One is quantifying the benefits of plants. A second is creating innovative production solutions to increase profits. The third is giving insight into consumer preferences and marketing. And a fourth is providing practical and actionable solutions.

“When we evaluate research grant requests, we measure those research projects against these four criteria,” McVicker said.

In addition to national research funding, Oregon has its own war chest for industry research. The Oregon Department of Agriculture (ODA) funds



Acer platanoides at the Lewis-Brown Horticulture Farm was used in rooting studies to evaluate stock plant handling techniques and cutting propagation.

PHOTO BY RYAN CONTRERAS

“We identify, prioritize and communicate the research needs of our industry to encourage the research community to address these needs, and we support and develop funding methods for worthy projects,” he said.

For 2021, ODA grant program funded \$260,360 to 12 different projects taking place in Oregon. The money comes from a research assessment that is charged to every licensed nursery in Oregon, as part of ODA’s annual nursery license fee. Thus, the industry is paying for the research that moves it forward.

In addition to the ODA money, OAN administers the Shade Tree Disease Fund, which supports research into exactly that. All the funding comes from individual and corporate donations.

Federally, the USDA Floriculture and Nursery Research Initiative (FNRI), part of the agency’s Agricultural Research Service, was created by Congress in 1999

a portfolio of nursery and greenhouse research grants annually through its Nursery Research Grant Program.

The Oregon Association of Nurseries plays an important role reviewing the grant proposals and recommending which to fund. The OAN’s Research Subcommittee, which is part of the association’s Government Relations Committee, is made up of members and chaired by Chris Lee of **Eshraghi Nursery** (Hillsboro, Oregon).

after lobbying from the American Nursery and Landscape Association (which became AmericanHort) and the Society of American Florists (SAF). For 2019, the FNRI allocated \$2.8 million in funding for 29 different ornamental horticultural research projects.

According to McVicker, HRI plays an important role in reviewing the grant requests and making recommendations for FNRI funding.

“They look to us, and if HRI validates

RESOURCES

OAN Research Committee: www.oan.org/page/nurseryresearch
Chris Lee, chair chris@eshraghinursery.com

**Oregon Department of Agriculture
Nursery Research Grant Program:** <https://www.oregon.gov/ODA/programs/NurseryChristmasTree/Pages/Grants.aspx>

Horticultural Research Institute: www.HRIResearch.org
Ken McVicker, president ken@woodburnnursery.com

2021 HRI Awards: www.HRIResearch.org/2021-funded-projects

**USDA Floriculture and Nursery
Research Initiative:** <https://endowment.org/fnri/>

2019 FNRI Awards: <https://endowment.org/wp-content/uploads/2021/03/FNRI-FY2019-ANNUAL-REPORTS-1.pdf>

USDA Specialty Crop Research Initiative: <https://nifa.usda.gov/funding-opportunity/specialty-crop-research-initiative-scri>

Half an acre of the Chemeketa Community College ag hub will serve as a Woody Ornamental Demonstration and Learning Lab.

PHOTO COURTESY OF SWINERTON



it, which is made up from members throughout the country, they pay attention to that,” McVicker said.

Finally, there’s the USDA Specialty Crop Research Initiative (SCRI), which is funded by USDA as part of the Farm Bill. It funds close to \$80 million per year in projects across all of agriculture.

For much of its history, SCRI funding did not include anything in the nursery or floriculture sectors, but that changed in the 1990s, when ANLA and SAF lobbied successfully for federal specialty crop recognition. It was a significant step that continues to bear fruit for the nursery industry. In 2020, the various SCRI awards included \$4 million for research into boxwood blight, \$3.5 million for research into the flatheaded borer (a nursery and orchard pest), and \$50,000 for research into automation to solve labor scarcity issues.

Some growers, such as **J. Frank Schmidt & Son Co.** (Boring, Oregon), also fund research privately, with their own foundations.

The OAN works hard to ensure that the state’s nursery has a strong voice in grant funding decisions. As a result, four Oregon growers sit on the HRI Board of Trustees. In addition to McVicker, Leigh Geschwill of **F & B Farms and Nursery** (Woodburn, Oregon), a past OAN president, also serves on HRI’s Executive Committee. Mark Krautmann of **Heritage Seedlings and Liners** (Salem, Oregon) and Matt Kramer of **Fall Creek Farm and Nursery Inc.** (Lowell, Oregon) serve as board representatives for the region that includes Oregon.

“It’s important for our members to engage with OAN research and with HRI,” McVicker said. “It’s vitally important for us as an industry moving forward to be supporting the research.”

Geschwill sees ongoing nursery research as a political asset. It enables the industry to say it is taking ownership of problems and cares about finding solutions through research.

“I think regulators are more likely to listen to us and to be supportive of us if they know that we are also working on a problem,” she said.

Success stories

Industry-funded, industry-led



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The grass roots of research

research has resulted in a number of success stories, which have made a positive impact on the industry. “There are too many successes to list,” Lee said.

Dr. Robin Rosetta, now retired, worked with various collaborators to develop the intelligent sprayer, which reduce chemical use

and drift by spraying only where plant material is detected along a row of production.

Dr. James Altland and Dr. Jim Owen, both formerly with Oregon State, did significant research on soilless substrates, and how to integrate fertilizers into the mix.

Contreras continues to work on numer-

ous plant breeding projects.

And these are just a few.

“All of the funded projects are valued,” Lee said. “Pointing to one of my interest would only distract importance from others beneficial to supplementary sects of the broad industry. However, the continual push and encouragement of new technologies, new methods, superior plant cultivars, new modes of actions and better practices are always driving the committee and researchers.”

In a recent and positive development, industry research isn’t necessarily limited to four-year colleges and universities.

Chemeketa Community College in Salem, Oregon, is dedicating one half acre of its new agricultural hub to creating a Woody Ornamental Demonstration and Learning Lab. There, students will explore different production methods (B&B, bare root, pot-in-pot), conduct new variety trials, and conduct workforce training.

“It’s kind of a big deal for community colleges to be involved in research, and we’re definitely getting into that realm,” said Larry Cheyne, interim director of Agricultural Sciences and Technology at Chemeketa.

Chemeketa is partnering with Woodburn Nursery and Azaleas Inc. to do some biochemical research trials in the greenhouse and fund a student intern. On its own, Chemeketa is also studying biocontrol in woody ornamentals.

“Work-based learning is really key to the program,” Cheyne said. “Every grant we have, or are applying for, we have built that in. And we have fantastic partners providing internship opportunities.”

Geschwill sees a double benefit to research funding at college and university hort programs.

“It not only helps with the research, but it also builds the program so that we can get some good quality graduates out of that program,” she said. “If you can find a grower that doesn’t need a new person on their staff, color me shocked. We all need more qualified people.” ©

Curt Kipp is the director of publications and communications at the Oregon Association of Nurseries, and the editor of Digger.

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Staff deliver a Kaizen reportout at Peoria Gardens.

PHOTO COURTESY OF THE PETERS COMPANY.



Lean, but clean

Faced with a pandemic, Lean nurseries adapted to stay ahead of the curve

BY ELIZABETH PETERS

EARLY LAST SPRING WE sat in the office of an Oregon nursery client. As Lean consultants to this company, we were there as the owner faced a crisis. He worked through scenarios and pondered how to survive a possible massive interruption to their greenhouse business.

We had just flown in from a client in Ohio, where restaurants had been shuttered and the airport was like a ghost town. No one knew what would happen next.

Uncertainty was a common theme throughout 2020. Wholesale growers didn't know if their customers would be deemed "essential" — or if they would be forced to close their own doors to protect employees and risk total crop loss.

For nurseries who have begun to adopt Lean principles — also known as the Toyota Production System (TPS) — uncertainty is something to become comfortable with.

Lean's approach is "learn-as-you-go." Team members are trained to solve problems daily. Then, when a real crisis hits, habits of responding and learning from those responses are already in place to help deal with big problems.

Ben Verhoeven, president and owner of greenhouse grower **Peoria Gardens** in Albany, Oregon, said Lean has helped the nursery adapt.

"The Toyota Production System has given us a way to look past all of the difficulties and limitations of the pandemic," he said. "It is really forward-thinking; it's about the future, not the past. That is healthy for our company and the mental health of our team."

Plug and seedling grower **JLPN Inc.**, based in Salem,

Oregon, started reducing their exposure risk with Lean well ahead of the pandemic.

"By deploying Lean five years ago, we focused on doing more work with less resources, and making it easier to complete a process," said John Lewis, president and owner. "We were already doing many things in smaller teams than we did historically. Processes such as container grading and seedling grading are completed with teams of 5–9 people versus 8–12. The smaller teams decreased cross-exposure and improved the safety of our employees.

"When the restrictions of COVID-19 came into play, our practices already in place allowed us to essentially operate business as usual, which was a massive win."

Lean, the pandemic and waste

Lean is described as "the relentless pursuit of the elimination of waste." Waste is defined as any activity that does not add value in the eyes of the paying customer. There are seven identified forms of waste:

- Transportation of product, information, or raw materials
- Inventory of product, information, or raw materials
- Motion, or movement of people
- Waiting of people, product, information, or raw materials
- Overproduction — producing more than the customer needs
- Overprocessing — doing more than is needed
- Defects — rework or scrap

The pandemic forced nurseries to change their processes, often to protect the health and safety of workers by preventing the transmission of the pathogen. This has resulted in both increased





waste, and reduced waste, in nurseries.

“Clearly, we have increased motion and overprocessing with all of the extra cleaning we are doing this year,” said Shane Brockshus, the chief operations officer for **Bailey Nurseries**, the Minnesota-based breeder and grower that also has farms in Oregon and Washington.

“We have limited people in certain areas and on certain jobs — examples being our container shipping dock and a sticking line in propagation — to allow for distancing. This has meant either moving people around more to do the work, or just slowing down a process. We are sending extra vehicles out to the fields to limit passengers. We have people spending a lot of time managing masks, putting up barriers, creating hoop houses for distanced lunch spaces, etc. These are all important safety measures that we take seriously for the health of our employees, but they are also new burdens to the business and our managers that we did not have before COVID-19.”

Peoria Gardens “saw increased motion and transportation, as we had to stretch out some of our processes — transplanting and propagation in particular,” Verhoeven said. “We’re batching more in our shipping, which leads to more inventory and product waiting. Shipping loads were not level, with some very busy days and some very slow days. We also saw a few defects due to pushing production as fast as we could. We had to order excess inventory of tags, in order to respond to the higher demand and the long lead time required.”

Change presents opportunity

Most Lean nurseries view the pandemic as an incredible moment in history.

“We saw the pandemic as an opportunity to think broadly about larger wastes and how we could eliminate them,” said Verhoeven. “Some changes made during the pandemic are ones we want to keep, and some we want to stop. We pictured our business as a house, and we’re moving to a new place. What do we want to unpack – and not unpack when all this is over?”



“[Bailey Nursery’s Production Manager] Scott Cowan has worked hard at timely cleanliness of our container farm,” Brockshus said. “This, combined with the improved ship-through of the farm, has things more orderly and organized, which results in decreased waste in most all our processes.”

Green industry trade associations across the country were effective voices for keeping the industry running in 2020. Because of that, most nurseries experienced higher sales volume this year, as consumers sheltered at home and played in their gardens. This kept nursery inventories low, which Lean leaders recognize

as significant waste reduction.

“Something to celebrate has been reduced inventory to take care of every day,” Brockshus said. “We have been blessed with higher sell-through of container and greenhouse inventory. This gets product off the ground and at the right time, which directly reduces defects.”

But the constantly depleted inventories kept growers on their toes, as they were forced to adapt and keep product available and moving.

“We’re working harder to put the voice of the customer into our production planning,” Verhoeven said. “Our old way would have been to forecast 6–8 months in advance of the shipping season and ride with that through the year. This year, during the heavy season, we were re-visiting the plan as often as three times per week because customer demand far outstripped our forecasting.

While that might have been over-processing at the time, we’re building more flexibility into the production plan to respond to customer demand.”

Adapting to change

Change is at the heart of Lean. Many refer to it as “continuous improvement.” The companies that master this improvement will gain a competitive advantage.

Like our nursery clients, we have had to change as consultants. We have moved our training classes to online delivery, and we’re finding new ways to deliver value to Oregon Lean Consortium members, even as they can’t be together in the same room, face to face.

	TPS	7-wastes	5S/POU	Flow	VSM	SMED	TPM	Events
Tom	●	●	●	◐	◐	◐	⊕	⊕
Mark	●	●	●	●	●	●	●	◐
Karen	●	●	●	◐	◐	◐	⊕	⊕
Steve	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
Jose	●	●	●	●	◐	◐	⊕	⊕
Beth	●	◐	◐	⊕	◐	⊕	⊕	⊕
Jeff	●	◐	◐	◐	◐	◐	◐	⊕

Skill Level	
●	Can train others
◐	Can perform solo
◑	Can perform with supervision
⊕	Some knowledge of task
○	Can not perform task

A cross training matrix breaks down the skill level staff members have for each job duty. The key identifies people who can train others, perform solo, perform with supervision, have some knowledge of the task, or can not perform the task.

CHART COURTESY OF THE PETERS COMPANY.

for advancing critical skills needed in different areas of the business. This matrix shows the skills mastery level of each person in a visual format for all to see.

Improvement events look different

An important Lean practice is running regular improvement workshops, called “kaizen events.” These are rapid, highly focused change activities by selected individuals from inside and outside a process. The team makes dramatic improvements to productivity, safety, quality, or lead time in that area of the business.

Kaizen events have been a challenge this year, with six-foot physical distancing, sanitizing requirements and occupancy limits.

Traditionally, Oregon Lean Consortium members work together to run kaizen events in each others’ businesses. This year, all consortium activi- ➤

One way the group has adapted is developing ongoing private discussions with top executives at the member companies. Leaders discuss their challenges and how they overcame them.

A recent topic was leadership development opportunities that have arisen since the pandemic. As employees need to self-quarantine, either from known exposure to COVID-19 or showing cold/flu symptoms, nurseries have stepped up their cross-training of staff so work can continue.

“This experience has highlighted the

importance of multi-skilled employees,” said Verhoeven. “We take safety very seriously at Peoria, so you can’t come to work with even the sniffles. This means we have more people on sick leave, or coming in and out of quarantine. We currently have one person on a travel-based quarantine. We deal with all the absence by training up as many people as possible. Our goal is that three people are able to do every job, and one person is able to do three jobs.”

Nurseries deploying TPS use the cross-training matrix as a visual control



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ties are moved online and members have opted not to visit other companies. We're still facilitating kaizen events, following strict safety guidelines. However, member companies are not able to enjoy the benefit of sharing the experience.

Some nurseries are developing their business strategy using policy deployment.

"This year JLPN decided to focus less on specific process-flow kaizen events and to launch policy deployment," said Lewis.

"Having a Lean mindset is making the challenge of introducing policy deployment much easier," said Lewis. "Now we can focus on a macro-win scenario for JLPN that will be made easier by our previous Lean activities."

Policy deployment is a strategic decision-making tool that unifies and aligns resources on the critical initiatives needed to accomplish business objectives. It unifies and

aligns people and establishes clearly measurable targets and accountability.

"It is the difference between the owner having a bunch of ideas that wouldn't have fully come to fruition, and the team coming up with their own greater improvements, then committing to making them happen," Verhoeven said. "Policy deployment really helped us in 2020 to prepare for the pandemic. We introduced new services like pre-pricing. It helped us pick and load our deliveries to make them easier for customers to receive. These are all things that wouldn't have happened this year without a robust policy deployment in place."

Uncertainty will always be with us

We are so impressed with the resiliency and optimism of Oregon nurseries deploying Lean. These leaders challenge us out of the status quo — and that's the

same challenge the pandemic has offered us, as well. It's given us the chance to envision the improved condition of our industry, and discover new ways to provide more value to our customers.

"In spite of everything that has happened, we have made some big, exciting improvements," Verhoeven said. "I'm so proud of our team. I'm impressed that we can still make changes when so much is in flux. We're working hard toward a better future rather than gnashing our teeth about an uncomfortable present." ©

Elizabeth Peters is vice president of The Peters Company, a lean consultancy. She has challenged leaders and facilitated hundreds of improvement events in various types of businesses and industries since 2009. She can be reached at 503-250-2235, epeters@petersco.net, or www.petersco.net

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Everde Growers, a leader in the horticultural industry is seeking a Propagation Supervisor to join our dynamic team at our Forest Grove, Oregon location.

SUMMARY: Propagation Supervisor will be able to work closely with the Production Manager for management and oversight of the Propagation department, including all aspects of propagation production from cutting harvest and preparation, sticking and potting, lay down, growing, finishing, sorting, canning and delivery to internal and external customers. This position will be responsible for executing the propagation production plans as set forth and coordinated through the Scheduling and Availability Departments.

Other responsibilities include but are not limited to: scheduling and prioritizing worklists, planning daily production and labor, working closely with growers and the availability team to coordinate planting and cutting collection, reporting and tracking production, scrap, productivity metrics and inventory adjustments. Everde Growers offers a full benefits package including PTO, Sick Pay, Holiday, multiple health and dental options with little out of pocket, 401k, FSA, and a full assortment of voluntary benefits to keep our employees and their families healthy. Candidates that are interested should email resumes to recruiting@everde.com

EMPLOYMENT

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 - o Working with irrigation equipment vendors
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 - o Research and development.
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Candidate should be familiar with common nursery practices, must have a valid insurable license, and a degree in Horticulture with basic knowledge of plant identification. This is a FT position/ Wage DOE- with full benefit package. To apply, send cover letter and resume to: Attn HR jobswc@baileynursery.com

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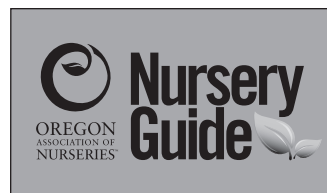
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You can also request an application by emailing TheNurseryOutlet@gmail.com www.TheNurseryOutlet.com

Note: Job description are not intended, and should not be construed to be exhaustive lists of all responsibilities, skills, efforts or working conditions associated with the job. They are intended to be accurate reflections of those principal job elements essential for making fair pay decisions about jobs.

EMPLOYMENT

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EMPLOYMENT

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- Stay current on product trends, customer trends, and market changes
- Review monthly P/L and annual P/L
- Nurture company philosophy with all employees
- Participate on management team
- Marketing direction - website; YouTube; print ad and trade show scheduling
- Discover new sales & growth opportunities

Qualifications:

- Bachelor's degree in Sales & Marketing or equivalent education and experience
- 3-5 years sales experience
- Excellent verbal and written communication skills
- Strength in planning, forecasting, negotiating, and an eye for detail
- Strong computer skills in Excel, Word, and not daunted by new skill
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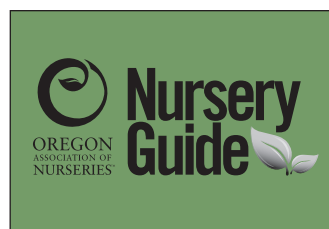
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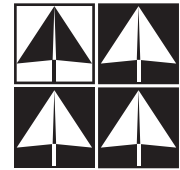
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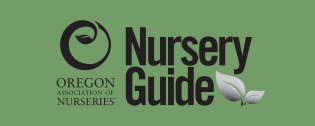
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GROWING KNOWLEDGE

Series content is coordinated by Dr. Jay Pscheidt, professor of botany and plant pathology at Oregon State University in Corvallis, Oregon.



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Figure 1. Layout of the field study in Hubbard, Oregon in the spring of 2020. PHOTO COURTESY OF OREGON STATE UNIVERSITY

Nixing nostoc

Researchers 'go to the mats' to test various control products


BY MARCELO L MORETTI AND DAVID KING

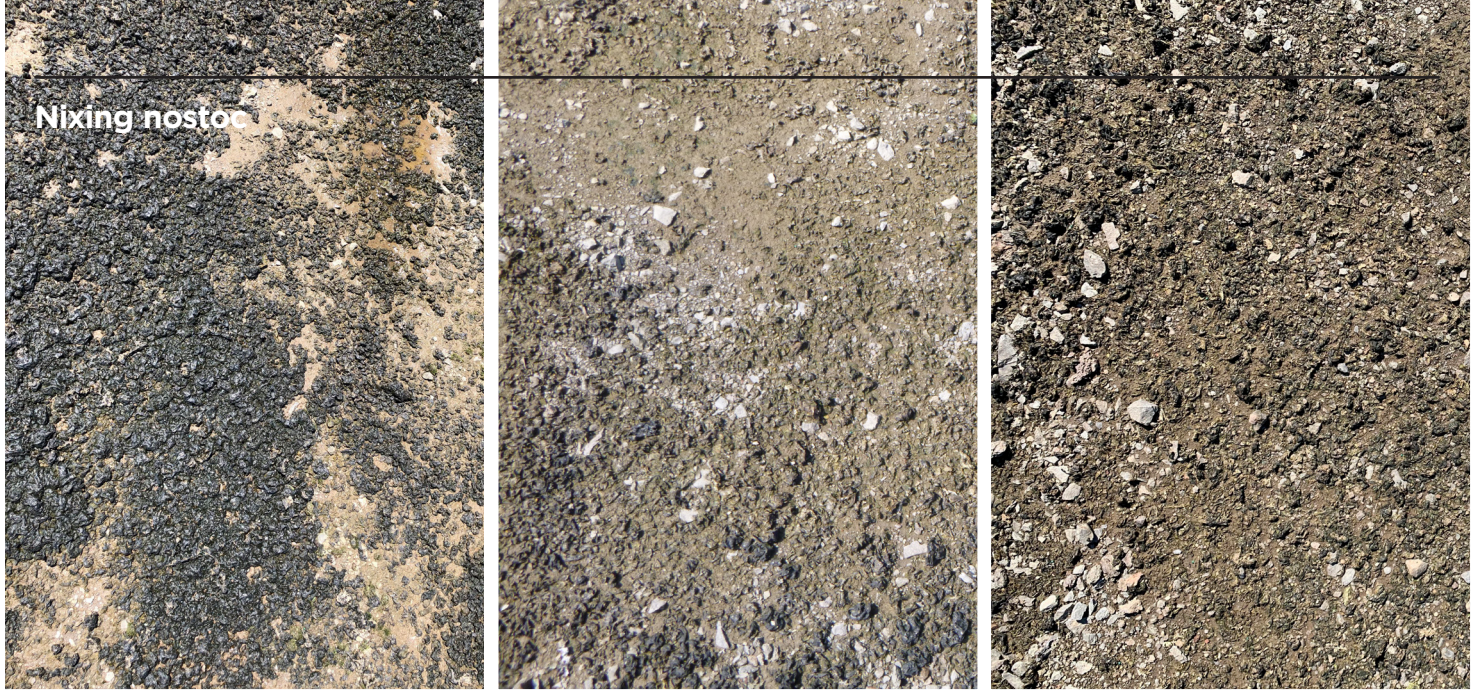
NOSTOC ARE CYANOBACTERIA COLONIES that can grow where abundant moisture is available. These bacteria form continuous colonies that resemble mats covering gravel, plastic, concrete, or flat surfaces. Nostoc grow during the spring and summer and create a slippery mat, posing a safety hazard to nursery work crews.

Control options for nostoc are very limited in nurseries. The objective of this study was to evaluate products to control nostoc.

In 2020, Oregon State University (OSU) Horticulture initiated

a project to assess potential new chemical management options for growers. We collaborated with a nursery in Hubbard, Oregon (Figure 1). This project was funded by the IR-4 Project Environmental Horticulture program (<https://www.ir4project.org/ehc/>). The findings of this research will support future registrations in ornamental crops.

At the time of this article's writing, the products listed below were not labeled for nostoc control in nurseries. The trade names and products are listed for reference and are not be interpreted as a recommendation. 



Nixing nostoc

Figure 2. Captain XTR 6 lbs./100 gal. (Treatment 2) plot at the beginning of the experiment (June 26, 2020), 21 DAT (July 17, 2020), and the end of the experiment (August 14, 2020) in the left, center, and right photos, respectively.

Methods

The study was conducted in an irrigated gravel site. Plots were chosen because at least 50% of their area was covered by nostoc mats. Treatments included Captain XTR (copper ethanolamine complex), Marengo (indaziflam), Kalmor (copper hydroxide), Scythe (pelargonic acid), and Sonar (fluridone) (Table 1), and were

applied using a research sprayer calibrated to deliver 50 gallons per acre.

Captain and Kalmor were reapplied 14 days after the initial treatment. Assessments included visual estimates of nostoc control; we recorded coverage at 3, 7, 10, 14, 21, 35, and 50 days after application. For simplicity, only the data for the final evaluation are presented.

Results

The copper-containing products, Captain XTR and Kalmor, controlled nostoc. As early as three days after treatment, Captain XTR controlled nostoc. Control reached 75–95% at seven days after treatment with a single application.

At the end of the experiment, Captain XTR resulted in 73–92% control and less



Figure 3. Kalmor 10 lbs./100 gal. (Treatment 5) plot at the beginning of the experiment (June 26, 2020), 21 DAT (July 17, 2020), and the end of the experiment (August 14, 2020) in the left, center, and right photos, respectively.



Figure 4. Marengo SC 18.6 fl. oz./A plot (Treatment 4) at the beginning of the experiment (June 26, 2020), 21 DAT (July 17, 2020), and the end of the experiment (August 14, 2020) in the left, center, and right photos, respectively.

than 12% of surface coverage, while nostoc covered 58% of the nontreated plots (Table 1 & figure 2).

Kalmor also controlled nostoc, but acted more slowly than Captain XTR, providing significant control (83%) 14

days after treatment. At the end of the experiment, Kalmor controlled 50–73% of the nostoc, and plot coverage was between 10–19% (Figure 3).

None of the other treatments tested in this experiment controlled nostoc.

This preliminary work indicates that copper-based treatments are effective in controlling nostoc. The project will continue in 2021. The long term goal is to expand the pest management tools for nurseries in Oregon. ©




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Nixing nostoc

Table 1. Nostoc control and coverage in response to various treatments in a irrigate gravel yard during the summer of 2020 in Hubbard, Oregon. Data were collected 50 days after initial treatment

Product (rate)	AI	Appl.	Control	
Treatment			(%)	
1. nontreated	-	-	0 b	58 ab
2. Captain XTR (6 gal/100 gallon)	Copper	2	73 a	12 c
3. Captain XTR (12 gal/100 gal)	Copper	2	92 a	3 c
4. Marengo SC (18.5 fl oz/A)	Indaziflam	1	0 b	58 ab
5. Kalmor (10 lb/100 gal)	Copper	2	50 a	19 c
6. Kalmor (20 lb/ 100 gal)	Copper	2	73 a	10 c
7 Scythe (10 % v/v)	Pelargonic acid	2	0 b	56 ab
8 Sonar (32 fl oz/A)	Fluridone	1	0 b	56 ab

Means followed by the same letter are not statistically different according to Tukey's test. Treatments were applied at 50 gallons per acre. Abbreviation: AI – the active ingredient. Appl. – number of applications

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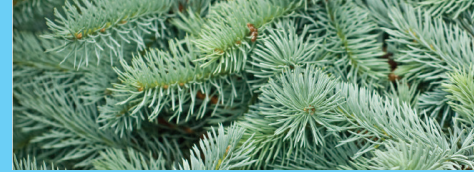
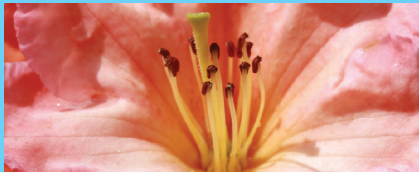
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Lessons of the pandemic

Every business sector has had to adapt to the pandemic.

The various trade associations representing these sectors also had to navigate the same challenging environment, but they had a double responsibility. They had to steer their industry through the pandemic, as well.

Nurseries did fairly well after an uncertain start to the pandemic. Other economic segments weren't so fortunate. I asked four trade group leaders to reflect on the lessons they learned over the past year. All were gracious enough to share their thoughts.

Hospitality

Jason Brandt has been at the Oregon Restaurant and Lodging Association (ORLA) for almost six years, following a successful 11-year run at Salem Chamber of Commerce. Needless to say, restaurants and hotels have been put through a trial by fire over the last year. No amount of training or experience could have prepared this elite CEO for the perfect storm of economic calamity that happened, and is still ongoing.

"We lose something in ourselves when our public-facing small businesses are taken away from our everyday life," Jason said. "More Oregonians now understand the value of industries like hospitality in keeping the fabric of our local economies intact. The small wins have mattered, as we have moved through a grueling year full of loss and challenge. Without a team of highly competent professionals at ORLA, it would have been near impossible to lead in the way the industry needed."

General business

As the leading business association in the state, Oregon Business & Industry (OBI) faces a great deal of pressure, even in normal times. They are often the tip of the spear for the business community in general. The past year brought a heavy dose of fear and panic for many. They needed an experienced hand at the helm of a business ship that was close to striking an economic iceberg.

Sandra McDonough, who led the Portland Business Alliance for 14 years, was drawn out of retirement to lead OBI. Sandra played an important role during the last year for all business associations. She often was

the one in direct communication with the governor on important matters.

"More than any other time in my career, the last year reinforced for me that we are never in this alone," Sandra said. "For so many months, we were all overwhelmed by the tremendous impact of the pandemic, and its cost in terms human health, shuttered businesses, and family incomes. On top of that were the other crises that hit our state — the wildfires, the long-overdue racial equity reckoning and the violent urban riots. Finding a path forward brought me closer to so many people I have worked with for a long time, and it introduced me to all kinds of new people I am lucky to know. It has reinforced the need to listen carefully and practice patience, and to remember that we are better when we are joined together looking for solutions that work even when they are not perfect. As we emerge to the other side of the pandemic, what I will feel is gratitude for the many people whose counsel and friendship got me through these very rough months."

Cattle ranching

Tammy Dennee, executive director of the Oregon Cattlemen's Association, has been in the job for almost seven months. It was a tough time to start a new job, but she brought with her experience in wheat and the dairy industry. To say the markets — both national and international — were dynamic would be an understatement.

"My professional experiences during the pandemic included an unscheduled job change which catapulted me into a very complex organization and needing to set a clear direction," Tammy said. "The physical office had been closed for months, and the volunteer board president was attempting to provide guidance to the staff, who was basically treading water. Six months into my new role, as I reflect, I realize the pandemic restrictions allowed me the opportunity to fully comprehend the operational side of the association. There are many of my board members whom I have only seen on a screen or heard on a conference call. I am looking forward to meeting them in person."

General agriculture

Dave Dillon, executive vice president of



Jeff Stone
OAN EXECUTIVE DIRECTOR

the Oregon Farm Bureau, is the dean of the ag trade group executives, and professional leader of the largest general farm association in Oregon. With almost 19 years in the industry, he is well known to be of keen mind and underappreciated for his strategic vision. He also happens to be one of my closest friends. There was nobody I learned from and leaned on more during the pandemic than Dave.

"Like all big, unexpected disruptions, the pandemic has been a chance to really look at 'normal' and question it," Dave said. "Like everyone else, it has let us see the possibilities of remote connection with others. It has also shown us very clearly some of the limits of gathering electronically. For the legislative process, the lack of in-person access to elected leaders, their staffs, and others in the advocacy arena has been disastrous in my view. Our board went a full year between in-person meetings. Losing that face-to-face presence and the time during breaks or before or after the business of the meeting was much more impactful than I had anticipated. I would close by celebrating the collaboration and mutual support our various associations have achieved through COVID-19. The ag family of member organizations was close before, and we are much closer now because our response to this pandemic. And we're all better for that closeness."

A year that defined us all

My fellow execs have a sole mission to protect the industries they serve. For me, true measure of someone's value is whether you would want them in a fox-hole with you in battle. For each of these, my answer is a resounding yes. ☺



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