

# EAT, DRINK, THRIVE

Newsletter of the Department of Food Science and Technology

Inspiring, Collaborating, Innovating to Advance Safe and Sustainable Food for a Healthier World

## Winners at work:

Dave Takush of Two Towns Ciderhouse is one of many FST alumni crafting entrepreneurial success stories

(STORY ON PAGE 7)



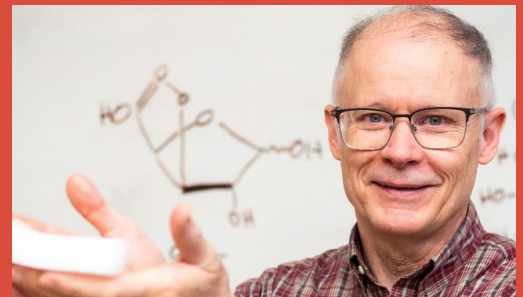
Dutch Bros CEO Joth Ricci to lead effort to upgrade Wiegand, elevate capabilities of FST.

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FST Professor Yanyun Zhao receives Oregon State's highest faculty honor.

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It's almost time to say thanks and farewell to Dan Smith.

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**MUCH MORE:** Food collaboration; the fry guy; Alaska training; research; cheese help and many awards.

# Dutch Bros CEO Joth Ricci heads FST elevation campaign

*A message from Dr. Lisbeth Goddik, department chair:*

Dear FST alumni and friends,

The Department of Food Science and Technology is proud to announce that **Joth Ricci**, '91, CEO of Dutch Bros, will lead the campaign to elevate FST into a world-class program with exceptional research infrastructure.

A member of the FST Advisory Board, Ricci calls the effort “an investment in establishing Oregon State FST as a valuable partner in the long-term competitiveness of Oregon’s food and beverage industry.”

He will work with the OSU Foundation’s “Believe It!” campaign and FST leadership, as well as the food and beverage industry, FST alumni and other food and beverage enthusiasts. Their central goal: Obtain funding to transform Wiegand Hall into a state-of-the-arts innovation center, delivering exceptional research, education, and outreach.



**Dr. Lisbeth Goddik, Department Head**  
Paul & Sandy Arbuthnot Professor  
Jacobs-Root Professor  
[Lisbeth.Goddik@oregonstate.edu](mailto:Lisbeth.Goddik@oregonstate.edu)

With a growing emphasis on sustainable food systems and Smart Manufacturing, FST is positioned to become a leader in crafting the future of food and beverage. Strong collaboration with College of Engineering and College of Business allows FST faculty to leverage OSU’s strengths in robotics, AI, and operational finance.

Ricci, a longtime leader in the beverage industry, held top positions in the beer, soft drink, wine and coffee sectors before joining Dutch Bros in 2019 and beginning his transition to CEO. In 2021 he led the company to the most successful initial public stock offering (IPO) in Oregon history. Far exceeding projections, it raised nearly half a billion dollars to help fund a push to grow from 600 locations to more than 4,000 within 10 or 15 years.

Read more about Ricci, his coaching-based leadership style and his commitment to family and public service in a 2022 profile in the *Oregon Stater*: [bit.ly/ricciprofile](https://bit.ly/ricciprofile).

# Top honor

## Yanyun Zhao named an Oregon State 2023 University Distinguished Professor

Oregon State University has named FST's Yanyun Zhao as a 2023 University Distinguished Professor, the highest academic honor the university bestows on faculty.

Also selected this year was Emily Ho, professor in the College of Public Health and Human Sciences and director of the Linus Pauling Institute.

Zhao is a professor of food science whose research focuses on sustainable food packaging.

“Professors Ho and Zhao are outstanding examples of OSU’s impact across Oregon and globally,” said Ed Feser, OSU provost and executive vice president. “It’s a pleasure to recognize their excellence in research, teaching and mentoring students at the undergraduate and graduate levels, and public engagement and service.”

Zhao is an internationally recognized researcher whose work aims to reduce the food industry’s dependence on single use plastic packaging. Her patented and licensed edible coating technique has had a broad impact in agriculture and the food industry, especially in reducing food loss and waste.

In 25 years at Oregon State, she has advised more than 40 graduate students, 14 postdoctoral scholars and about 20 undergraduate students and interns. She has received \$23.5 million from grants and contracts to support her research, which has resulted in her being granted 12 patents.

She is also associate dean for faculty affairs in the College of Agricultural Sciences.

Zhao's Distinguished Professor lecture, “A Challenging Yet Rewarding Journey In Search Of Sustainable Food Packaging Solutions,” was livestreamed and is available on YouTube at [bit.ly/zhaolecture](https://bit.ly/zhaolecture). (Her presentation starts at about the 13-minute mark.)

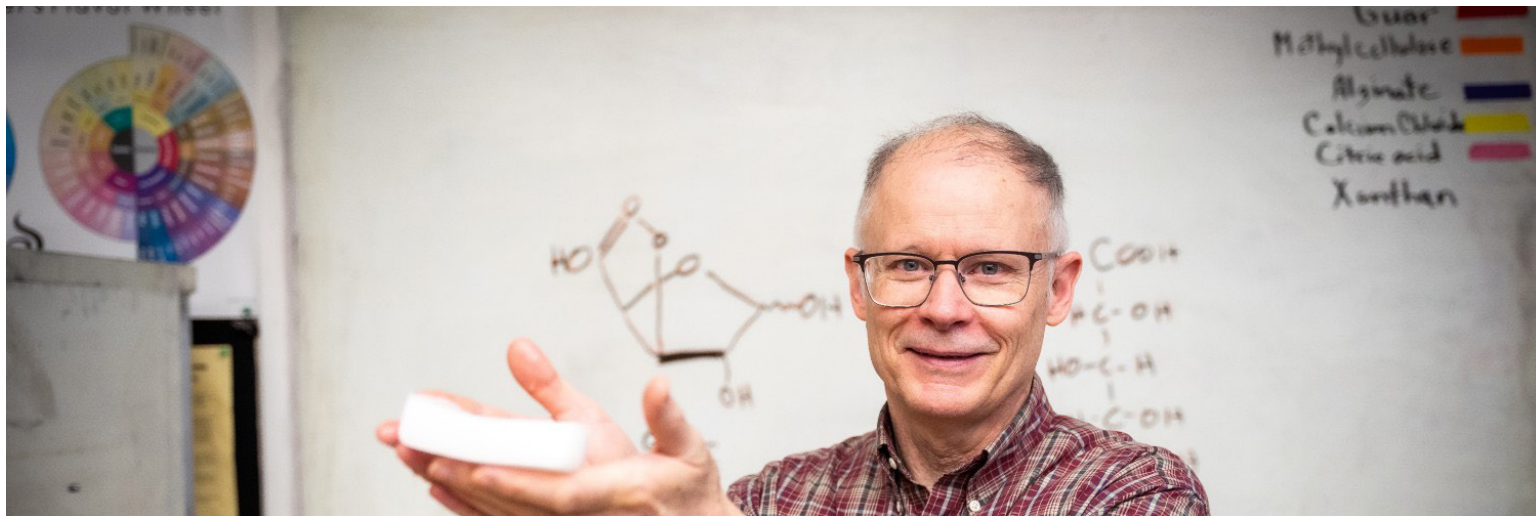
Since 1988, the university has awarded the title of University Distinguished Professor to current OSU faculty members who have achieved national and



international distinction for their contributions in research and creative work, teaching and mentoring, public engagement and service.

*Below: Zhao explores turning apple pomace (crushed waste material) into environmentally friendly packaging.*





# Dan Smith is retiring (yes, really)

## Reflections on 30 years of teaching and advising in FST

### **What did you enjoy most about advising FST students?**

If I had to point to one thing, it would be that advising, particularly students in their late teens to early twenties, allowed me to have a front row seat to a period in these young people's lives as their adult selves were rapidly taking shape. I have lost count of the number of students whose growth during the years they were in FST made them seem almost different people at graduation than they were on their first day. That some of the interactions we had along the way hopefully contributed to that transformation has been very satisfying.

Interestingly, this major has always attracted a significant number of students who brought with them substantial life experience. Students in their mid-to-late 20s, and even 30s and beyond, quite a few of them post-baccalaureate, have been a great pleasure to work with. They typically brought a well-developed sense of self and a clear vision of what they wanted to achieve. Advising them was often a matter of helping them identify specific opportunities and then just get out of their way and watch them excel.

### **How have the undergraduate program and students changed over the decades?**

I began advising about the same time as we introduced our Fermentation Science Option, followed a few years later by the Enology & Viticulture Option. The explosion of interest in craft brewing and boutique winemaking in

the late 1990s and early 2000s, and the uniqueness of our program, attracted students in droves from all over the country. At one point in the last decade, our program doubled twice within five years. By then I needed a partner to be able to meaningfully meet the advising needs of all 200-plus students in the program. The department's response in creating a fermentation science instructor/advisor position was important to serving the needs of our students and gave me the additional reward of having a colleague whose position closely mirrored my own. As that wave crested by the late "teens", the latest generation of students emerged expressing a strong desire to be part of creating sustainable food systems. This interest on the part of our students has aligned with that of the food industry and led to an evolution of our major with a new name, Food Science & Sustainable Technologies, reflective of the increased emphasis in this area.

Apart from the changing career focus of students there has also been a change in their expectation about what they are to learn in college. As they recognize their careers will involve many changes, and there will be a need for periodic reeducation, they tend to view a bachelor's degree as just one step in a life-long educational journey. Since the degree is less perceived as education for a lifetime than it was by my generation, today's students desire demonstration of the immediate relevance of their learning to the job they will seek immediately after graduation.

## Alumni on Dan:

Dan really helped me to find focus, which ultimately set me on a path to a very successful career that I love. I knew what I wanted to do, but I had initially chosen a roundabout way to get there. He had a gift for cutting through the clutter and asking the right questions that switched my major from chemical engineering to food science and fermentation. Best decision ever. — Leah Chapin, '03, senior director, product insights & innovation, E. & J. Gallo Winery

Dan Smith is one of the most influential people in my education and subsequent career. He clarified things for me when I couldn't see a path. His investment in every Food Science and Tech graduate for decades has to be one of the most impactful forces in the food and beverage industry. It is daunting to think of how many industry leaders past/present and future are where they are because of Dan's encouragement, organization and communication. I feel comfortable speaking for all Oregon State Food Science graduates over the years in saying Dan Smith is one of the best men I've had the privilege of knowing. — Sean Martin, '15, production manager, Ninkasi Brewing

I have found it important to incorporate into my teaching stories from alumni that illustrate how their FST education prepared them to be creators and problem solvers in this industry. More important still has been helping students obtain internships where they can observe first-hand the application of their education to work.

### **What are some of the challenges you have experienced in advising?**

I have seen far too many students struggle, and, unfortunately, some not complete the program, due to the impact of the cost of education. Well over half of the academic distress I have witnessed has been rooted in a circumstance where a student is attempting a full load of STEM courses while also working a full-time job (or two) to try and make ends meet. Some have heroically succeeded, but for too many it has been too big a hill to climb. FST fundraising for scholarships over the last decade has been remarkable (thank you alumni and friends of the department), and new scholarships have significantly considered financial need alongside academics and extracurricular activities in making awards. In more than a few instances I have seen receipt of one of these scholarships translate into improved academic performance, or even make the difference between graduating versus leaving the program without a degree. I often wonder about the students whose financial circumstances prevented them from reaching OSU at all, and how that has restricted development of diversity in the ranks of food science professionals.

COVID-19 and the associated move to remote teaching and advising was by far the most disruptive event of my career. The rapid deployment of distance technology helped us get through it and has provided some lasting benefits. However, extensive reliance on distance technology for teaching and advising also seems to be contributing to an increasing sense of isolation for students. I think community building strategies have become more important than ever before in education.

### **What has been the best thing about being in FST?**

We are a relatively small unit at a large university. Given our prominence in research, I have had the good fortune to work closely with, and learn from, some of the most accomplished people in this field. Notwithstanding their many accolades, professors in FST are approachable by all. Students feel seen by their professors, and from the first-year student to the IFT fellow, this is a place where community thrives, and relationships are not restricted by hierarchy. Through gatherings like Oktoberfest, the Bean Blowout, Souper Bowls, and many others, we have consistently come together in informal spaces to create a mutually supportive community. It has been gratifying to watch students form relationships, in their classes, the Student Lounge, or through the Food & Fermentation Science and other clubs, and to see those relationships persist and evolve

## More alumni on Dan:

He's spent countless hours (many of them overtime) replying to student emails, writing recommendation letters, setting up internship opportunities, planning graduation parties, developing new lectures, fixing teaching lab equipment, helping colleagues, reviewing scholarships, meeting with every student quarterly ... and the list goes on and on. He's loved by students, admired by his peers, valued by the alumni and will forever have my gratitude. — Jessica Just, '98, director of operations, Jacobsen Salt Co.

Wise, humorous, and compassionate are the first adjectives that come to my mind when someone mentions Dan Smith. He has helped myself and countless other students navigate the rough terrain of college advising and post graduation job hunting. He made my transfer from a community college quick and seamless and even took the time to meet with me when I was not yet a student at OSU. He will be sorely missed. Best of luck Dan and cheers to a happy retirement! — Kevin Kuenzi, '22, R&D process development engineer, OFD Foods

over decades as they move on in their lives. Alumni have also remained connected to FST and to me (nearly 500 through LinkedIn). It has never been difficult to find graduates of our program who are eager to speak in classes or in other ways give back to their department.

### What do you hope will be your legacy?

As an advisor I hope I will be remembered as someone who tried to establish a meaningful connection with every student with the goal of helping them get the most out of their experience here. Guiding students in developing study plans that took into account the many factors in their lives that affected their education contributed to their success and helped them avoid missteps that would have been costly in time and money.

My teaching heart has always been in the lab. Along with most of our students, I love to see science made manifest: in a well-tempered chocolate bar, a reformulated beverage, or the aroma and color brought to foods by Maillard reactions. The aged facility in which we worked was sometimes a hindrance, but some equipment acquired through grants and the creative efforts by our teaching staff (including TAs) helped make for good learning outcomes. I am over the moon about the renovation of our facilities in Withycombe Hall. I was excited to have had input into the creation of a food science teaching lab that will have flexible spaces that will allow students to move seamlessly from bench work to group discussion and analysis. I am calling on friends and alumni of FST to help me realize the goal of having this state-of-the-art space filled with equipment to match. We very much need modern instruments for measuring texture and viscosity. This new lab also needs the less glamorous essentials of glassware, heating and stirring apparatus, balances, spectrophotometers, pH meters, and the like. As I retire from teaching food chemistry, it would be gratifying to know that those who succeed me will have all the tools required to create a compelling and fully relevant learning experience every week.

## WANT TO HELP HONOR AND CELEBRATE DAN SMITH?



Visit [foodsci.oregonstate.edu/foodsci/dan-smith](https://foodsci.oregonstate.edu/foodsci/dan-smith) for links to information about events ranging from the IFT convention in Chicago to a tailgater during the fall Beaver football season, as well as information on how to help make Dan's wish come through by funding the new Dan Smith Food & Beverage Teaching Laboratory.

Also available are links to leave a video clip or a brief written message.

# Entrepreneurs lead the way

## We asked three FST grads to tell us about growing their businesses

**David Takush:** David Takush is the Head Cidermaker and Co-Owner of 2 Towns Ciderhouse in Corvallis.

Takush grew up in Corvallis and soon developed a love of cooking, fermentation, and a keen interest in science. He attended Oregon State University, graduating with a BS in Fermentation Science in 2007 and an MS in Food Science in 2009. Takush began his career home-brewing with his first attempt of hard cider being a 10 gallon batch pressed on his parent's farm while he was an undergrad at OSU. During his undergraduate studies, Takush worked in the craft brewing industry developing his passion and taste. During his graduate years, he worked with Dr. James Osborne studying yeast and its effect on Pinot Noir wine, and soon transitioned into the wine industry, working in both Washington State as well as the Willamette Valley, Oregon.

In 2010, Takush jumped at the chance to become a cidemaker and joined up with two friends Lee Larsen and Aaron Sarnoff-Wood, in an old 900 square foot, two-car garage. 2 Towns Ciderhouse, named after the towns of Corvallis and Eugene, was founded on the principles of bringing cider back to the people, and restoring the historic beverage to its former glory through integrity in both ingredients and process. 2 Towns prides itself on using quality ingredients and whole fruits with no shortcuts.

From those humble beginnings, 2 Towns has now grown into one of the largest craft beverage companies in the northwest now employing over 100 individuals, distributing to 15+ states and running 3 different production facilities totaling almost 100,000 square feet. In addition

to cider, 2 Towns has expanded to become a total beverage company spanning multiple sister brands including: Craftwell Cocktails™, Nectar Creek® Meadery, TeaREX Killer Tea™, and SeekOut™ Seltzer.

2 Towns has been able to develop this growth by leaning into what they are well versed in as a company; sourcing high quality ingredients and leveraging fermentation tech-

niques honed over the past decade of pushing boundaries in craft. With Takush at the helm, the R&D team, composed of 100% OSU alumni, regularly accepts the challenge of working with new ingredients and processes as their desire to learn and experiment with new products fits the 2 Towns company culture of innovation.

As a family-owned company, 2 Towns is committed to the growth of its team and enrichment of its communities.

It takes pride in producing true Northwest craft beverages. 2 Towns is Oregon's largest cider producer, was voted one of *Oregon Business Journals'* Best Places to Work, multiple years in a row, and recently received the *Portland Business Journal's* Most Admired Companies award. With a focus on community and building a diverse talent pipeline for the fermentation industry, the company has established the 2 Towns Ciderhouse Change Scholarship at Oregon State University that awards scholarships to underrepresented students studying in the OSU Fermentation Sciences Program.

**(See more on FST Entrepreneurs, next page)**



## Continued: FST grads talk about founding their own startups



**Bryan Weil:** Bryan Weil graduated from FST’s Enology and Viticulture program in 2008 and hit the ground running to what would be a very successful career. Now he reports that he “has some exciting things happening in the Dundee Hills,” where he is developing a new 40-acre vineyard and 24,000 square foot custom crush winery.

Early on he was able to work at a small winery South of Corvallis, Tyee Wine Cellars, where he did everything with the owner in the vineyard, winery and tasting room while still attending OSU. After graduating he had the amazing opportunity to work at a very large winery up in Washington State called Hogue Cellars. This is where he really

honed his winemaking skills and, he writes, “learned an incredible amount in the five years he spent there.”

Weil was also able to travel during his time at Hogue to New Zealand where he held a visiting vintage winemaking position at Kim Crawford. Although he enjoyed his personal and professional life up in Washington, the Willamette Valley, where he grew up, and pinot noir started to draw him back.

In 2012 he was hired by Lynn Penner-Ash to build a new winery with her for a consulting client. That winery was Alexana, which is in the Dundee Hills AVA (American Viticultural Area). During his 11 years at Alexana he accomplished a lot of things but some of the highlights were building another winery in the Uco Valley of Argentina, developing a second vineyard for Alexana and receiving two top 100 rankings in the *Wine Spectator*.

Everything was going great at Alexana when, in 2021, he got the chance to be a partner in a brand-new vineyard and winery development called Vinovate Wine Services. He is currently finishing the vineyard planting and winery construction and will be making wines for multiple clients for this 2023 harvest. Vinovate Wine Services has the goal of becoming the Willamette Valley’s premier ultra-premium custom crush winery. Conveniently located on Worden Hill Road in the heart of the celebrated Dundee Hills, their state-of-the-art gravity flow facility has been custom-designed to service high-end, small-lot dedicated brands that share our commitment to quality.

Although Bryan is very busy with this project, he still has time to enjoy all things food and wine in the Willamette Valley with his wife and two young daughters. And of course he always has time to cheer on the Beavs!

**(See more on FST Entrepreneurs, next page)**



## Continued: FST grads talk about founding their own startups



**Larry Sidor:** Olympia Beer, Hamm's, Pabst, Lone Star, Ballentine Ale, Mirror Pond, Black Butte Porter, The Abyss, Red Chair, Dissident, Crux Pils, Castout, Tough Love, Crux NØ MØ NA, Crux Wine, Crux Straight Bourbon, Crux Cider, plus a few hundred more products that you may have experienced, these have either been created, nurtured, or taken to market by Larry Sidor, a 1972 graduate of FST and a member of the FST Advisory Board.

"I set off to start an Oregon vineyard and winery," he wrote. "Due to the lack of investor confidence in the Oregon wine industry (and me) plus my financial position, this endeavor didn't come to fruition.

"Instead, the brewing industry chose a career path for me. It started with Olympia Brewing Company. At the time they held the largest market share on the west coast. In the 23 years I was employed, I ran every operating department and ultimately was the overall operations manager. During this time Olympia purchased both the Hamm's Brewing Company and the Lone Star Brewing Company. Later the Pabst Brewing Company merged with Olympia. This expanded my duties to also include the corporate positions of Director of R&D and in my last few months of employment, Director of QA. During my tenure, innovation was always at the forefront. I developed a process to

convert brewery waste into fuel ethanol, created a system to collect, purify, and distill CO<sub>2</sub> to make the brewery a net exporter of CO<sub>2</sub>, participated in the development of new beers as well as dramatically improved the shelf life of existing beers.

"My next stop was with the Hopsteiner Company. While there, I revolutionized the quality of the hop pelletization process. So much so, that the Anheuser Bush Company converted their brewing process from leaf hops to pelletized hops. In addition, I invented a method of cryogenically processing freshly harvested hops that improved yield, quality, and reduced fossil fuel usage. While there, I championed the sale of hops to the craft brewing industry. So much so, that one of my bigger customers hired me, Deschutes Brewery.

"While at Deschutes, I expanded their product portfolio from essentially porter and pale to IPA's, sour, Salmon Safe, organic and barrel aged beers.

"My last and final stop was co-founding Crux Fermentation Project in Bend. It has resulted in continuous innovation. It's called a fermentation project because it's just not limited to beer. In addition to beer we have fermented, wine, cider, whiskey, pickles, kraut, and pizza dough. This was all made possible by the knowledge given to me by OSU FST.

# OSU 1 of 2 lead institutions in \$30 million food-business grant

OSU's Food Innovation Center and The Food Corridor, which focuses on shared kitchen space to help food entrepreneurs, have announced a key partnership in the newly announced, Northwest and Rocky Mountain Regional Food Business Center.

The two agencies will co-lead the theme priority of Connecting and Scaling Food Entrepreneurs. Ashley Colpaart of The Food Corridor and Sarah Masoni of the Food Innovation Center will co-lead this theme.



Their combined experiences with food entrepreneurship make them a powerful team. Lauren Gwin, interim director OSU's Center for Small Farms & Community Food Systems, is OSU's lead for the new, 6-state center, which is underwritten by an initial \$30 million grant.



The Northwest and Rocky Mountain Regional Food Business Center is co-led by Colorado State University and Oregon State University and will work across the western states of Colorado, Idaho, Montana, Oregon, Washington, and Wyoming. The new center will serve as a central node for the region's small and mid-tier food and farm business



and local and regional food sector development initiatives by supporting cross-regional collaboration, providing, and analyzing relevant and timely data, and serving as a gateway for USDA programs and other third-party funding opportunities.

The Northwest and Rocky Mountain Regional Food

Business Center will support farm, ranch, and food businesses, as well as broader supply chain development through technical assistance, capacity building through direct investment, staff capacity, and information resources and coordination via strategic sharing and coordinated action. The Center plans to provide foundational business development support for small and mid-sized farm and food businesses participating in local and regional food sectors. Programs will focus on four themes that are high-priority for our region:

- resilient animal protein supply chains,
- connecting and scaling food entrepreneurs,
- expanding and diversifying markets for climate-resilient agricultural products,
- right-sizing infrastructure and investment.

One regional leadership team, six state teams (Colorado, Idaho, Montana, Oregon, Washington, and Wyoming), the four theme teams, and a cohort of food sector leaders from underserved audiences will help to frame and engage with all initiatives and provide shared governance at all levels of the center. Together these teams will guide technical assistance, coordination, and capacity-building efforts. Over a quarter of the Center's resources will be allocated to Business Builder awards for farm or food businesses that need capital to launch and expand their businesses.

**(At left, top down:  
Ashley Colpaart,  
Sarah Masoni,  
Lauren Gwin)**

# Food safety training request sends FST professors to help in Alaska

In late March, Drs. Jovana Kovacevic and Joy Waite-Cusic traveled to Anchorage, Alaska to deliver their 2-day Pathogen Environmental Monitoring Program (PEMP) workshop to environmental health officers who regulate various food businesses throughout the state. Nineteen state officials (including OSU FST alumnus Eric Brundidge) and two representatives from the Alaska food industry attended the workshop. Attendees representing all eight of the regional offices traveled to the workshop, which offered a rare opportunity for them to meet in person. **(See photos, next page.)**

Alaska officials asked for the workshop based on a recommendation from a previous PEMP workshop attendee: Claudia Coles, president of the Seafood Products Association and a significant advocate of OSU's food safety efforts.

The PEMP workshop was initially developed in June 2019 as part of an Oregon Specialty Crop Block Grant. It was designed to help the produce industry to understand the findings of this research as well as to interpret and implement FDA's draft guidance on *Listeria* spp. environmental monitoring. Lecture topics in the course include:

- Introduction to environmental foodborne pathogens, with a specific focus on *Listeria monocytogenes* and *Salmonella*
- A review of the Food Safety Modernization Act regulations and where environmental monitoring fits within a food safety program
- Methods and Procedures for developing a PEMP
- Sanitary Facility and Equipment Design
- Cleaning and Sanitation
- Handling Positive Results and Corrective Actions
- FDA Inspections and Guidance Documents

The workshop includes several interactive group exercises, including developing an initial PEMP for a fictional food processing facility and collecting environmental swabs, including real-time ATP swabbing, analysis, and interpretation. The most memorable and critical part of the course is a mock sampling game where participants implement a PEMP in an IQF Pea Processing facility and "submit" their samples to the laboratory and deal/struggle with the results and conducting several rounds of investigative/intensified sampling to attempt to find a *Listeria monocytogenes* harborage site in their mock facility.

The anxiety of the room is palpable as they await each round of results. After the third round of positive sample results, it is common for at least one member of each group to mutter "I think I better look for a new job". After each group thinks they have identified the harborage site, Waite-Cusic shares the "real answer" and points out interpretations that may have been flawed or sampling approaches that cost excessive time or money without yielding helpful results. After the completion of the workshop, attendees were asking for more.

At the end of the workshop, Kovacevic, Waite-Cusic, and attendees received an exceptional tour of the Alaska State Public Health Laboratories, where they met with the Alaska state veterinarian and heard about their testing program for Avian influenza.

Kovacevic and Waite-Cusic returned home to Oregon with more workshops in their future. They taught Preventive Controls for Human Food in Portland in April, several Produce Safety Grower trainings throughout the spring, and a new Cleaning and Sanitation Workshop for Fresh Produce Operations to be offered later this fall.

# Photos from Alaska workshop



Top: Anxiety and surprise were common as the two trainers (in this case Jovana Kovacevic) revealed results from the simulation. Next down: The large group of attendees was appreciative of the OSU crew's work. At right: Kovacevic and Joy Waite-Cusic develop and offer several training workshops.

# OSU Creamery works with students from College of Engineering

The OSU Creamery has started collaborations with the School of Engineering this year, with the engineering students completing capstone projects. The first team was from Industrial Engineering. They took on the project of optimizing efficiency in the FST Food Truck, building better racks and more practical and efficient storage (below).

Other engineering capstone students installed a solar-powered battery system in the truck so it can function remotely without its generator. The truck made a welcome appearance at this year's engineering capstone fair (right).



## Rogue Creamery helps the FST creamery make cheese during remodel shutdown

To help keep FST's Beaver Classic cheese on the market while the OSU dairy products plant is being dramatically renovated and expanded, Rogue Creamery in Central Point is providing access to its facilities. To start the collaboration in January, Rogue president David Gremmels and FST's Robin Frojen (both in foreground at right) used Rogue's plant to make about 3,000 pounds of Beaver Classic.



# Two FST scientists make progress on wildfire smoke's impact on wine

A study published in *Food Chemistry Advances* in April by FST's Elizabeth Tomasino and Cole Cerrato in collaboration with Tom Collins of Washington State University discovered new chemical compounds causing the ashy flavor and aroma in smoke impacted red wines exposed to wildfire smoke!

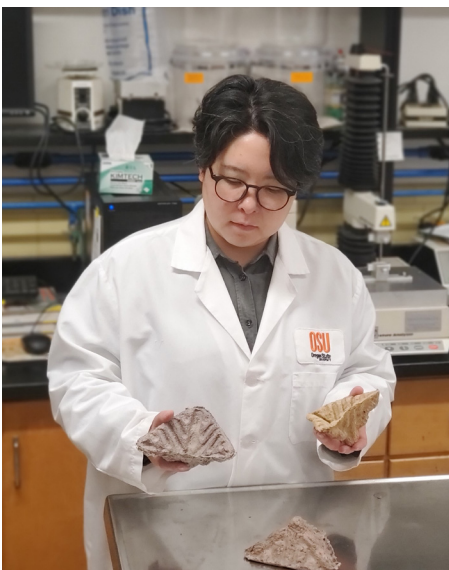
Since the first studies linked elevated amounts of volatile phenols in wine impacted by smoke, winemakers and researchers have agreed that volatile phenols cannot be the primary chemical cause of smoky or ashy sensory aspects in the smoke-affected wines. The flavor of elevated phenols did not always translate to a smoky or ashy flavor, but instead produced a chemical or medicinal flavor in the wines.

An earlier discovery of a new sensory training standard for the ashy flavor, burnt leeks, by Tomasino and doctoral candidate Jenna Fryer, also led to discovering chemical similarities between the burnt leeks and smoke impacted wines. An in-depth look at the chemical analysis of smoke affected wines revealed an elevated amount of a novel class of

compounds that had not yet been investigated: thiophenols. The new class of compounds includes over a dozen thiolated phenol compounds and potentially more. In this publication, the team focused on a group of thiol compounds analogous to the previously known volatile phenols, thioguaiacol and the thiocresols, specifically, for further sensory analysis. The sensory study was able to positively confirm and show causation of the ashy flavor in smoke affected wines being caused by a combination of both volatile phenols and the new thiophenols.

The discovery could impact the future of winemaking in regions growing grapes in Oregon and for growers all over the world impacted by wildfires. Further research will develop methods for winemakers to detect the new thiophenols and to determine the amounts that might have an impact on the flavor and aroma in wine. This will also be a new target for the team to develop new mitigation strategies so that winemakers can continue to produce the wines they want to make and that customers love so much.

## Grants will advance biowaste packaging



Dr. Jooyeoun Jung (PI) (at left and Dr. Yanyun Zhao (Co-PI) received a USDA NIFA AFRI grant, "Converting plant fiber-based biowastes from agricultural and food production to sustainable, economically viable, and hydrophobic molded pulp packaging products" with a total award of \$649,055. This project will develop high quality pulp and a series of cellulose-fiber based biodegradable packaging by modifying plant biowastes via

eco-friendly and energy-saving technologies. Dr. Jung (PI) also received a National Institute of Agricultural Science grant from South Korea "Establishment of a platform to utilize biodegradable materials derived from processing byproducts to contribute to carbon neutrality" with the total award \$195,000. This project is to convert spent coffee ground into biodegradable and thermally insulated food packaging materials.

# Faculty, students receive awards

## ELIZABETH TOMASINO

### NAMED A 2022 INNOVATOR OF THE YEAR BY WINE ENTHUSIAST

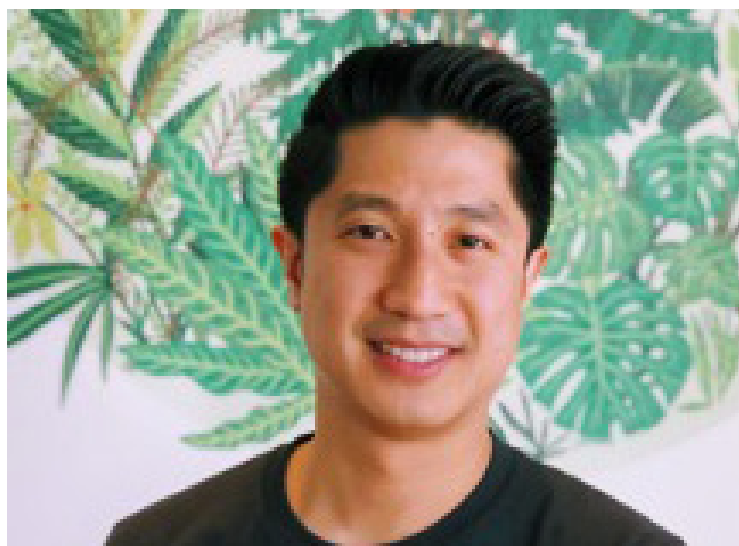
Associate Professor Elizabeth Tomasino was named an “Innovator of the Year” by *Wine Enthusiast* magazine, alongside Anita Oberholster of UC-Davis and Tom Collins at WSU, for their progress in research on smoke-impacted wine. Tomasino (center in photo) has been at the forefront of research examining the impact of smoke on wine. Her contributions have led to the discovery of a new chemical cause of smoke impacts, new methods of detecting chemicals in smoky wines, new standards for sensory experiments, and supporting the industry through chemical testing during wildfire events.



## HAILEY (LEYI) ZHOU AND BRYAN GASPICH

### PACIFIC FISHERIES TECHNOLOGIST ORAL COMPETITION

Hailey (Leyi) Zhou and Bryan Gaspich, Master’s students from FST’s Kwon lab participated in the Student Oral Presentation Competition at Pacific Fisheries Technologist (PFT) 2023 Conference and won First and Third places, respectively. Hailey presented her research project focused on *in silico* prospecting for novel bioactive peptides in *Crassostrea gigas* and Bryan presented his project on determining the effectiveness of comminution methods for cell lysis of fish byproducts. They received the award certificates and \$800 (first place) and \$400 (third place) award prizes.



## RON SAMIA

### ARCS SCHOLARSHIP

Ron Samia has received a 2-year ARCS (Achievement Rewards for College Scientists) Foundation Oregon Chapter scholarship, intended to advance science and technology in the United States by providing financial awards to academically outstanding students that are U.S. citizens and are studying to complete PhDs in the STEM (science, technology, engineering, and math) and medical research fields at Oregon State University, Oregon Health & Science University, and the University of Oregon.

# '50 FST grad an original fry guy

**Ken Strong helped McDonald's create the fries and spread them around the globe**

Murray Strong, '81, was enjoying the spring 2023 issue of the *Oregon Stater*, with food as its theme, when he realized another Beaver — his late father— might have been deserving of inclusion.

“The university’s Food Science and Technology program has an impressive history but may not be aware that the McDonald’s French Fry is also a product of a graduate of their department,” he wrote. “William K. Strong (Ken), attended OSU in the late '40’s under the GI Bill (and graduated in 1950).



“In 1963, my father went to work as a food technologist for a promising drive-in chain called McDonald’s. In 1965 a patent for “Process For Preparing Frozen French Fry Potato Segments” was applied for with his name listed as assignor to McDonald’s Systems Inc.

“My father’s work involved traveling the world for 25 years, working with food suppliers to ensure that the chain’s French fries tasted the same no matter where they were purchased. In the early 1990’s the frying oil was changed from animal fat to vegetable oil, slightly altering the original taste (and something my father was not in approval of), but the product has still been a favorite for the world over for the past 60 years, from young children to Julia Childs.”

Ken Strong’s main expertise was in consistently slicing potatoes to produce pieces that would fry the same no matter where in the world they were served.

Food industry watchers now estimate that the chain sells about 9 million pounds of fries per day.



*Ken Strong cutting fries in Addison, Illinois, in 1965.*