



Marketing & Communications

In Q3 of 2021, CAHNRS Communications published 48 online articles that highlighted accomplishments in academics, research, student accomplishments, and Extension. CAHNRS and Extension websites received 1,204,841 total page views and garnered 751,292 new site visitors. We increased our audience size and engagement on social media, with a total of 334,809 impressions across three platforms.

TOP NEWS STORIES

- [Gen Z willing to rent clothes to reduce waste](#) By **Scott Weybright** | Published August 10 in KHQ Right Now, Science Daily, Just Style, Phys.org, Study Finds, Her Circle, Fashion United, Ecotextile, Down to Earth, Duluth News Tribune, The Swaddle, KQKY, Outdoor Industry Compass, iHeart Radio TBB Extra Podcast, Quora
- [Systems approach assesses public health impacts of changing climate, environmental policies](#) By **Seth Truscott** | Published September 17 in Times of India, Nature World News, India Today, Florida News Times, The Daily Voice, Science Daily, Environmental News Network, Techlive
- [Using satellite images to measure impact of longer growing season](#) By Scott Weybright | Published September 2 in In Washington Post, Newsbreak, The Farmer, Morning Ag Clips, Vegetable Grower's News, Miller Orchards

Faculty Highlights and Awards

- CAHNRS Interim Dean **Rich Koenig** welcomed Ambassador and U.S. Trade Representative Katherine Tai to WSU Mount Vernon Northwestern Washington Research and Extension Center (NWREC) and the WSU Breadlab on August 5. Tai joined U.S. Congresswoman Suzan DelBene (D-Wash.), U.S. Congressman Rick Larsen (R-Wash.), WSDA, WSU researchers, tribal leaders, farmers, producers, and agriculture leaders from across WA to discuss trade and exports.
- **Jenifer McIntyre** (School of the Environment) testified before members of the Congressional Natural Resources Subcommittee on Oversight and Investigations at the hearing “*Are Toxic Chemicals from Tires and Playground Surfaces Killing Endangered Salmon?*” on July 15. The subcommittee is probing scientific evidence that the chemical 6PPD-quinone plays a role in the massive death of coho salmon.
- **John Stark** (Entomology) was named a member of the Washington State Academy of Sciences (WSAS) Board of Directors. Associate Dean of Research **Scot Hulbert** and **John Peters**, Director of the Institute of Biological Chemistry, were newly elected members to the WSAS.
- **Tom Collins** (Viticulture & Enology), nationally known for his work with smoke exposure and its effect on wine fermentation, has been confirmed as president of the American Society for Enology and Viticulture (ASEV) for 2021–2022. Collins will lead the 12-member ASEV Board.
- **CAHNRS Communications** Video Team won a Gold in the dotComm Awards, an international competition in web creativity and digital communication, for their video [Selection Methods for Honey Bee Breeding](#), and an honorable mention for their video [Combating Bacterial Diseases of Onion: How Do We Stop the Rot?](#)
- **WSU Extension X-Disease/Little Cherry Disease Team** won the Western Extension Directors Association Award of Excellence. Team members are **Tianna DuPont**, **Tobin Northfield**, **Louis Nottingham**, **Bernardita Sallato**, **Scott Harper**, **Karen Lewis**, **Gwen Hoheisel**, **Cody Molnar**, **Ricardo Naranjo**, and **Jenny Bolivar**.
- Good Housekeeping named WSU’s ‘**Cosmic Crisp**’ apple a Healthy Snack Award winner for the second summer in a row. It was praised for its crisp bite, refreshing taste, good nutrition, antioxidants, and fiber.

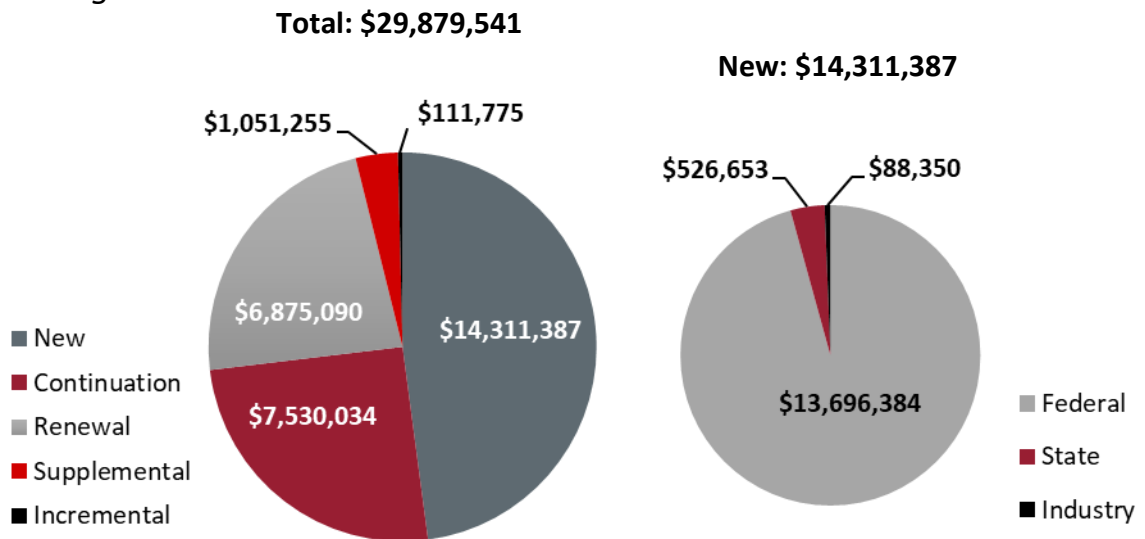
Grant Funding

CAHNRS Research and Extension faculty received **\$29.9M** in extramural support in the form of new and ongoing grants, contracts, agreements, and services rendered. A selection of new awards (with award total) is given below:

Notable Grants Include:

- **Lav Khot** (BSE/CPAAS), **Michael Brady** (School of Economic Sciences), **Manoj Karkee** (BSE), **Kirti Rajagopalan** (BSE), **Claudio Stockle** (BSE), **Qin Zhang** (BSE/CPAAS), **Dave Brown** (AgWeatherNet), and colleagues from WSU’s Voiland College of Engineering and Architecture, “AI Institute: Agricultural AI for Transforming Workforce and Decision Support (AgAID),” USDA-NIFA-NSF National AI Research Institutes program, \$20M
- **Kevin Murphy** (Crop & Soil Sciences), **Girish Ganjyal** (School of Food Science); **Juming Tang** (Biological Systems Engineering); from CSS—**Deirdre Griffin LaHue**, **Vicki McCracken**, **Anna Warner**, **Clark Neely**, **Gabe Lahue**, **Robert Brueggeman**, and **Stephen Jones**; from USDA-ARS—**Kimberly Campbell** and **Rebecca McGee**; from the Elson S. Floyd College of Medicine—**Franck Carbonero**, **Pablo Monsivais**, **Patrick Solverson**, and **Martine Perrigue**; from Johns Hopkins University—**Andrew Thorne-Lyman**, **Jessica Fanzo**, and **Katalin Szlavecz**; and Kansas State University’s Office of Educational Innovation and Evaluation, “Optimizing Human Health and Nutrition: From Soil to Society,” USDA-NIFA-AFRI Sustainable Agricultural Systems, \$10M
- **Achour Amiri** (PP, TFREC), **Carolina Torres** (Horticulture, TFREC), **Suzette Galinato** (SES), **Bernardita Sallato-Carmona** (Ext. ANR, IAREC), and **Karina Gallardo** (SES/Ext. ANR, Puyallup REC), “A Systems-Based Approach to Enhance Quality, Safety, and Shelf Life of Organic Tree Fruit in the Pacific Northwest,” USDA-NIFA-Organic Agriculture Research and Extension Initiative, \$1.5M
- **John Harrison**, **Stephen Bollens**, and **Gretchen Rollwagen-Bollens** (SoE), **Michael Brady** and **John Yoder** (SES), and **Kirti Rajagopalan** (BSE), “DISES: RUI: Understanding the Use of Discretion and its Socio-Environmental Consequences for Reservoir Systems,” NSF, \$1.6M
- **Andrei Smertenko** (IBC), “Improving Crop Resiliency: Multidisciplinary Training of Future Agriculture Leaders Through Research and Extension,” USDA-NIFA-Research and Extension Experiences for Undergraduates, \$500K
- **Anand Jayakaran** (Ext. ANR), **Michael Neff** (CSS), and **Nigel Pickering** (WA Stormwater Center), “Ditch Maintenance & Retrofits for Improved Stormwater Management,” WA State Dept. of Ecology, \$497K

Q3 Grant Funding



Peer-Reviewed Publications

CAHNRS faculty published **215** articles in peer-reviewed journals and conference proceedings. These are cataloged in our Weekly Published Research Archive ([available here](#)). In addition, Extension faculty published **4** peer-reviewed Extension Fact Sheets, Extension Bulletins, and Technical Bulletins. A selection of notable publications is provided below with their 5-year impact factor.

- **Jenifer McIntyre** (SoE), “Treading water: tire wear particle leachate recreates an urban runoff mortality syndrome in Coho but not Chum salmon,” ENVIRONMENTAL SCIENCE & TECHNOLOGY – Impact Factor 9.9 – 93rd in Environmental Sciences and 88th in Environmental Engineering
- **Helmut Kirchhoff** and **Vaclav Svoboda** (PhD student) (IBC), “Impact of ion fluxes across thylakoid membranes on photosynthetic electron transport and photoprotection,” NATURE PLANTS– Impact Factor 17.3 – 98.9 percentile in Plant Sciences
- **Mei-Jun Zhu** (SFS), “Practical in-storage interventions to control foodborne pathogens on fresh produce,” COMPREHENSIVE REVIEWS IN FOOD SCIENCE AND FOOD SAFETY– Impact Factor 15.4 – 99th percentile in Food Science & Technology
- **Hanwu Lei** and **Rongge Zou** (PhD student) (BSE), “Pyrolysis-catalysis for waste polyolefin conversion into low aromatic naphtha,” ENERGY CONVERSION AND MANAGEMENT – Impact Factor 9.0 – 98.9 percentile in Mechanics, 98th in Thermodynamics, and 91st in Energy & Fuels
- **Holly Neibergs** (AS), “Identifying loci associated with bovine corona virus infection and bovine respiratory disease in dairy and feedlot cattle,” FRONTIERS IN VETERINARY SCIENCE – Impact Factor 3.6 – 94th percentile in Veterinary Sciences
- **Ben-Min Chang** (Postdoc) and **Markus Keller** (Hort., IAREC), “Cuticle and skin cell walls have common and unique roles in grape berry splitting,” HORTICULTURE RESEARCH – Impact Factor 6.6 –98.7 percentile in Horticulture, 94th in Plant Sciences, and 89th in Genetics & Heredity
- **Cynthia Gleason** (PP), “Biotechnological advances with applicability in potatoes for resistance against root-knot nematodes,” CURRENT OPINION IN BIOTECHNOLOGY – Impact Factor 9.8 –96th percentile in Biochemical Research Methods and 93rd in Biotechnology & Applied Microbiology
- **Zhiwu Zhang** (CSS), “MMAP: a cloud computing platform for mining the maximum accuracy of predicting phenotypes from genotypes,” BIOINFORMATICS – Impact Factor 8.5 –96th percentile in Mathematical & Computational Biology and 93rd in Biochemical Research Methods
- **Elizabeth Beers** (Ento.), “Meta-analysis and review of pesticide non-target effects on phytoseiids, key biological control agents,” PEST MANAGEMENT SCIENCE – Impact Factor 4.7 –96th in Entomology and 91st in Agronomy
- **Deirdre Griffin-LaHue** (CSS), **Yingxue Yu** (PhD candidate, CSS), **Edward Scheenstra** (Hort.), **Carol Miles** (Hort.), and **Markus Flury** (CSS), “In-field degradation of soil-biodegradable plastic mulch films in a Mediterranean climate,” SCIENCE OF THE TOTAL ENVIRONMENT – Impact Factor 7.8 –91st in Environmental Sciences

Research, Extension Events, & Community Outreach

- **Stefano Musacchi** (Hort.) convened the XII ISHS International Symposium on Integrating Canopy, Rootstock, and Environmental Physiology in Orchard Systems on July 26-30. The virtual digital format enabled participants from 30 countries to attend, along with Keynote Speakers from Cornell, UC Davis, New Zealand, Italy, and our very own **Lav Khot** (BSE/CPAAS).
- **Jenny Bolivar-Medina** and **Bernardita Sallato** (Ext. ANR) presented three **WA38 Field Days in Spanish**: July 22 at Roza Experimental Orchard at WSU IAREC in Prosser; August 4 at Sunrise Experimental Orchard at WSU TFREC in Rock Island; and September 22 at Roza, focused on Starch Index. Attendees learned about green spot, rootstocks, heat stress management, dendrometers, and hedging in WA38.

- **Per McCord** led the Cherry Breeding Program Field Day on July 7 at WSU Prosser IAREC. Growers, researchers, students, and stakeholders learned about the Cherry Breeding Program, toured the cherry crossing house and seedling blocks, and heard research updates from **Jonathan Magby** (PhD student) and **Rainier Peters** (MS student).
- **Naidu Rayapati** (PP, IAREC) implemented a new summer internship program for students from Columbia Basin College and Heritage University, two Hispanic-serving institutions in Yakima, with grants from NSF and USDA-NIFA. The students explored agricultural careers as they rotated through WSU and USDA labs, learning about plant ecology, plant genetics, crop and soil sciences, and fruit tree and grape horticulture.
- **WSU Researchers** conducted a **WA Fruit Smart Orchard Field Day** on July 30 in Grandview, WA. The Smart Orchard—a partnership between WSU, the Washington Tree Fruit Research Commission, and Walla Walla-based Innov8.ag—demonstrates various technologies and dozens of sensors that monitor orchard health and apple growth and development. Attendees saw the sensors implemented and learned about their functions and associated ongoing research.
- The **Viticulture & Enology Program** presented two Washington Advancements in Viticulture and Enology (WAVEx) webinars: *Working with High pH Wines* on July 14 (**Thomas Henick-Kling**) and *What's in your Brett Toolbox?* on August 5 (**Charles Edwards**).
- **WSU-Washington State Grape Society Viticulture Field Day**, held on July 29 at WSU Prosser IAREC Roza Research Farm, featured a series of educational rotations at themed stations: Canopy Cooling (**Ben-Min Chang**); Irrigation for White Wine Grapes (**Markus Keller** and **Geraldine Diverres-Naranjo**); Smoke Exposure (**Tom Collins**, **Yue Hofmeister**, and **Mackenzie Aragon**); Powdery Mildew Scouting (**Michelle Moyer** and **Maria Mireles**); and Soil and Water (**Bernie Gagnier** and **Lexie McDaniel**).

Alumni & Development

- Grand opening and ribbon cutting of the new **Ruth Wylie Headhouse** at the WSU Mount Vernon Northwestern Washington Research and Extension Center (NWREC) occurred on August 6. Nancy Kerchevalm, WSU Agricultural Economics alum and Wylie's daughter, donated \$150,000 towards the building of the new facility, which was matched by the Skagit County Board of Commissioners.
- **Eleanor Otto** committed to a \$1,000,000 gift to establish a wheat research endowment.
- **Rob Mercer** gave \$75,000 in current use funds to support PhD students in the School of Economic Sciences who are working on vegetable crops.
- **Beverly and Jim Cook**, Emeritus faculty and former Interim Dean, gave \$100,000 to support the Cook Agronomy Farm.
- **Gordon Davis** made a \$200,000 pledge payment with a commitment to finish off his Cashup Davis Family Endowed Deanship pledge before the end of the year.
- The **Puget Sound Institute of Food Technologists** donated \$100,000 to create an endowment in the School of Food Science, which will be used to fund an undergraduate teaching instructor and to update undergraduate teaching labs. It also donated \$50,000 to SFS student scholarships.
- **Auction of Washington Wines** raised over \$2.2M in its first hybrid auction held August 10-14. A portion of the proceeds will benefit WSU Viticulture and Enology Program.

Student News

- **Phoebe Unger** (SFS, MS student) and **Aichatou Djibo Waziri** (CSS, PhD candidate) received a Foundation for Food & Agriculture Fellowship.
- **Megan Meharg** (V&E student) was recognized as the Wine Spectator 2021 Wine Student of the Year, which included a \$15,000 scholarship from the Wine Spectator Scholarship Foundation.