



Communications

In Q2 of 2017, CAHNRS Communications Office published **58** Online Articles that highlight accomplishments in Academic Programs, Research and Extension. A selection is given below:

TOP NEWS STORIES

- [Vineyard, WSU scientists team up to battle virus threat](#) – By Seth Truscott | Published June 12, 2017 | Appeared in Capital Press, Growing Produce, Fruit Growers News, Google Plus, other outlets
- [Cyber gene network could speed up discoveries](#) – By Seth Truscott | Published April 3, 2017 | Appeared in Washington Ag Network, Wenatchee Valley Business World, Internet2.edu, Phys.Org, other outlets
- [Clark County children learning about farming, food at Heritage Farm](#) – by Scott Weybright | Published June 9, 2017 | Appeared in the Columbian, Google Plus, WSU News

SOCIAL MEDIA

Facebook	70 Posts	988 Likes	86,403 Reached	2,924 Fans (+2.2%)
Top Post: Emerging Undergraduate Leader Awards				
Twitter	514 Tweets	435,914 Impressions	12,426 Engagements	4,415 Followers (+2.3%)

Faculty Highlights

- **Lindsey du Toit** (PP) was named incoming Vice President of the American Phytopathological Society (APS). This is a 4-year term which will include her serving as Vice-President, President-Elect, President, and Past-President.
 - APS has more than 4,500 members from around the world. CAHNRS has a strong presence in the organization. Current and past presidents of APS include **Tim Murray** (PP) and **Jim Moyer** (Associate Dean for Research)
- **Markus Flury** (CSS) was elected a [Fellow of American Association for the Advancement of Science](#) (AAAS).
- **Jessica Goldberger** (CSS) was named the [President of the Agriculture, Food, and Human Values Society](#). The AFHVS is a professional organization that provides an international forum to engage in the cross-disciplinary study of food, agriculture, and health. The Society encompasses individual and institutional members from disciplines ranging from agricultural production and the rural social sciences to nutrition policy and the humanities.
- **Qin Zhang** (BSE, CPAAS) won the [John Deere Gold Medal Award](#) from the American Society of Agricultural and Biological Engineers. The award honors achievement in engineering for improved manipulation, use and conservation of soil and water, and application of a new concept or product that advances the development of agriculture.
- **Michael Gaffney** (Director, Ext.) received the [2017 Rep. Timm Ormsby Citizenship Award](#) for his role in aiding the recovery efforts of the SR530 (Oso) Slide project. The Ormsby Award for Faculty Citizenship is presented by the Washington Council of Faculty Representatives and was created to encourage, recognize, and honor exemplary civic engagement by faculty from each of the six public universities in Washington State.
- **Betsy Beers** (Ent.) received the [Excellence in Integrated Pest Management \(IPM\) Award](#) from the Pacific Branch of the Entomological Society of America at its annual meeting in April 2017.
- **John McNamara** (Emeritus, AS) received the [ACES Award of Merit and the Round Barn Society membership](#) from his alma mater, the University of Illinois College of Agriculture, Consumer and Environmental Sciences. Dr. McNamara was a leader in establishing pet nutrition courses in animal sciences. His book, "Principles of Companion Animal Nutrition," is used in the United States, Canada and Europe.
- **Debbie Inglis** (PP) was presented the [Innovation in Agriculture Award](#) by Skagitonian's to Preserve Farmland.

- **Thomas Marsh** (SES) received The Graduate & Professional Student Association (GPSA) Award of Excellence for his contributions as an Academic Advisor during the 2016 -2017 academic year.
- **James Harbertson** (VE), **Thomas Collins** (VE), and **Caroline Merrell** (VE) were awarded top honors at the Worldwide Distilled Spirits Conference in Glasgow, Scotland in recognition of their new technique for distilled spirits analysis.
- **Robby Cooper** (HD) received the Richard G. Law award for Excellence in Undergraduate Teaching.
- **Marcia Ostrom** (SOE) received the inaugural Excellence in Innovation Award by the Agriculture, Food & Human Values Society at their 2017 Annual Meeting⁷. The Awards Committee recognized Dr. Ostrom for her collaborative approach to designing inclusive and participatory sustainable farming education programs that engage a wide range of audiences from immigrant farmworkers to academic students to conventional farmers.
- **Steve Lyon**, Senior Scientific Assistant, was named Washingtonian of the Day during a recent visit by **Governor Jay Inslee** to the WSU Mount Vernon Bread Lab.
- **Brenda Boyd** (HD) Executive Director of the WSU Children's Center, was selected to serve on the Early Childhood Education Workforce Council as a representative of higher Ed programs that are not doing teacher licensure.
- **Congressman Denny Heck** visited the Puyallup REC on May 5th for a tour and an update on progress with the Washington Stormwater Center.
- **Jane Lanigan** (HD) received the Early Learning Champions Award for excellence in early childhood education from the Friends of Educational Opportunities for Children & Families in Vancouver.
- **Congressmen Dan Newhouse and Rodney Davis** visited the IAREC in Prosser, WA on April 7th. The group toured the facilities to learn house programs such as AgWeatherNet, the Clean Plant Center, CPAAS, and others are instrumental to the sustaining and enhancing the specialty crop industry in Washington State.

Grant Funding

CAHNRS faculty received \$14M⁺ in extramural support in the form of new/ ongoing grants, contracts, agreements and services rendered. A selection of federal awards (with award total) is given below:

New Grants Include:

- **Michael Neff** (CSS) was awarded a \$466K NSF IOS grant from NSF to study the ATAF2 transcription factor, brassinosteroid catabolism and plant development.
- **David Crowder** (Ent.) was awarded a \$475K AFRI Foundational grant from USDA to explore mechanisms mediating plant-virus-herbivore interactions in legume crops.
- **Sindhuja Sankaran** (BSE) was awarded a \$500K AFRI Foundational grant from USDA to study high-throughput phenotyping techniques to advance variety selection in grain legumes.
- **Ting Chi** (AMDT) was awarded a \$140K Higher Education Challenge grant from USDA for collaborative curriculum development and assessment that is intended to better prepare a competitive 21st century workforce in the fiber, textile and apparel sector.

Large Grants that Received Yearly Renewals Include:

- **Juming Tang** (BSE), Center of Excellence for Food Safety Technologies using Microwave Energy, USDA AFRI, \$1M
- **Arron Carter** (CSS), Next Generation Variety Development and Education for Grains, Apples, Alternative Crops, and Cool Season Legumes, USDA-AFRI, \$1M
- **Min Du** (AS), ZFP423 and Progenitor Adipogenesis during Aging, NIH R21, \$200K
- **Jim Pru** (AS), Mechanisms of PGRMC1 Action in Endometrial Proliferation, NIH R21, \$229K
- **John Browse** (IBC), Biochemical Genomics: Deciphering the Chemical Factories of Oilseeds, NSF IOS, \$1.3M
- **Thomas Okita** (IBC), Deciphering the role of RNA binding proteins in RNA transport, localization, and post-transcriptional processes, NSF IOS, \$868K
- **John Browse** (IBC), Chloroplast Lipid Composition: Connecting Biophysics to Photosynthetic Function, \$200K

Publications

CAHNRS faculty published **168** articles in peer-reviewed journals and conference proceeding: these are cataloged in our Weekly Published Research Archive ([available here](#)). A selection of these publications, which appeared in journals that rank in at least the 90th percentile in their respective fields, is provided below with their 5-year impact factor.

*Note: During 2017-Q2, >25% of all publications from CAHNRS were in the top 10% of their respective fields

DISCOVERY

- **Helmut Kirchoff** (IBC), "Surface charge dynamics in photosynthetic membranes and the structural consequences," NATURE PLANTS – Impact Factor 10.3 – 98th percentile in Plant Sciences
- **John Peters** (IBC), "Mechanistic insights into energy conservation by flavin-based electron bifurcation," NATURE CHEMICAL BIOLOGY – Impact Factor 13.0 – 97th percentile in Biochemistry & Molecular Biology
- **Michael Pumphrey** (CSS), "Genome-wide association mapping for seedling and field resistance to *Puccinia striiformis* f. sp *tritici* in elite durum wheat," THEORETICAL AND APPLIED GENETICS – Impact Factor 4.1 – 99th percentile in Horticulture
- **David Gang** (IBC), "A (-)-kolavenyl diphosphate synthase catalyzes the first step of salvinorin A biosynthesis in *Salvia divinorum*," JOURNAL OF EXPERIMENTAL BOTANY – Impact Factor 6.2 – 95th percentile in Plant Sciences
- **David Gang** and **Helmut Kirchhoff** (IBC), "Functional photosystem I maintains proper energy balance during nitrogen depletion in *Chlamydomonas reinhardtii*, promoting triacylglycerol accumulation," BIOTECHNOLOGY FOR BIOFUELS – Impact Factor 7.4 – 93rd percentile in Energy and Fuels
- **Holly Neibergs** (AS) and **Kris Johnson** (AS), "Identification of loci associated with susceptibility to *Mycobacterium avium* subspecies *paratuberculosis* (Map) tissue infection in cattle," JOURNAL OF ANIMAL SCIENCE – Impact Factor 2.3 – 91st percentile in Dairy and Animal Science
- **Min Du** (AS), "Casein glycomacropeptide-derived peptide IPPKNQDKTE ameliorates high glucose-induced insulin resistance in HepG2 cells via activation of AMPK signaling," MOLECULAR NUTRITION & FOOD RESEARCH – Impact Factor 4.7 – 96th percentile in Food Science and Technology
- **Kiwamu Tanaka** (PP), "Non-host Resistance: DNA Damage Is Associated with SA Signaling for Induction of PR Genes and Contributes to the Growth Suppression of a Pea Pathogen on Pea Endocarp Tissue," FRONTIERS IN PLANT SCIENCE – Impact Factor 4.5 – 93rd percentile in Plant Sciences
- **Cynthia Gleason** (PP), "Identification of two *meloidogyne hapla* genes and an investigation of their roles in the plant-nematode interaction," MOLECULAR PLANT-MICROBE INTERACTIONS – Impact Factor 4.3 – 92nd percentile in Plant Sciences
- **Craig Morris** (ARS, CSS), "Evidence of intralocus recombination at the *Glu-3* loci in bread wheat (*Triticum aestivum* L.)," THEORETICAL AND APPLIED GENETICS – Impact Factor 4.2 – 97th percentile in Agronomy
- **Matthew Whiting** (Hort.), "Time indices of multiphasic development in genes of sweet cherry are similar from dormancy to cessation of pit growth," ANNALS OF BOTANY – Impact Factor 4.1 – 91st percentile in Plant Sciences
- **Bin Yang** (BSE), "Discovery of cellulose surface layer conformation by nonlinear vibration spectroscopy," SCIENTIFIC REPORTS – Impact Factor 5.5 – 90th percentile in Multidisciplinary Sciences
- **Min Du** (AS), "bta-miR-23a involves in adipogenesis of progenitor cells derived from fetal bovine skeletal muscle," SCIENTIFIC REPORTS – Impact Factor 5.5 – 90th percentile in Multidisciplinary Sciences
- **Min Du** (AS) and **Mei-Jun Zhu** (SFS), "Resveratrol supplementation of high-fat diet-fed pregnant mice promotes brown and beige adipocyte development and prevents obesity in male offspring," JOURNAL OF PHYSIOLOGY-LONDON – Impact Factor 4.95 – 92nd percentile in Physiology
- **Min Du** (AS), "Peptide IPPKNQDKTE ameliorates insulin resistance in HepG2 cells via blocking ROS-mediated MAPK signaling," JOURNAL OF FUNCTIONAL FOODS – Impact Factor 4.3 – 94th percentile in Food Science & Technology

- **Mei-Jun Zhu** (SFS) and **Min Du** (AS), “AMPK improves gut epithelial differentiation and barrier function via regulating Cdx2 expression,” CELL DEATH AND DIFFERENTIATION – Impact Factor 8.0 – 92nd percentile in Biochemistry & Molecular Biology
- **Min Du, Dan Rodgers, Mike Dodson** (AS), and **Mei-Jun Zhu** (SFS), “Resveratrol enhances brown adipocyte formation and function by activating AMP-activated protein kinase (AMPK) alpha 1 in mice fed high-fat diet,” MOLECULAR NUTRITION & FOOD RESEARCH – Impact Factor 4.7 – 96th percentile in Food, Science & Technology
- **Michael Pumphrey** and **Xianming Chen** (CSS), “Novel Sources of Stripe Rust Resistance Identified by Genome-Wide Association Mapping in Ethiopian Durum Wheat (*Triticum turgidum* ssp *durum*),” FRONTIERS IN PLANT SCIENCE – Impact Factor 4.5 – 93rd percentile in Plant Sciences
- **Diter von Wettstein** (CSS), “Pattern of Protein Expression in Developing Wheat Grains Identified through Proteomic Analysis,” FRONTIERS IN PLANT SCIENCE – Impact Factor 4.5 – 93rd percentile in Plant Sciences
- **Xianming Chen** (CSS, ARS), “Wheat transcription factor TaWRKY70 is positively involved in high-temperature seedling plant resistance to *Puccinia striiformis* f. sp *tritici*,” MOLCULAR PLANT PATHOLOGY – Impact Factor 5.3 92nd percentile in Plant Sciences

TRANSLATIONAL

- **Richard Shumway** (SES) and **David Huggins** (CSS) “Impacts of terrain attributes on economics and the environment: costs of reducing potential nitrogen pollution in wheat production,” AGRICULTURAL ECONOMICS – Impact Factor 1.7 – 91st percentile in Agricultural Economics and Policy
- **Hang, Liu** (AMDT), “Fabrication and characterization of Nylon 6/cellulose nanofibrils melt-spun nanocomposite filaments,” COMPOSITES PART A-APPLIED SCIENCE AND MANUFACTURING – Impact Factor 4.2 – 96th percentile in Manufacturing Engineering
- **Carolyn Ross** (SFS), “Perception of carbonation in sparkling wines using descriptive analysis (DA) and temporal check-all-that-apply (TCATA),” FOOD QUALITY AND PREFERENCE – Impact Factor 3.9 – 92nd percentile in Food, Science & Technology
- **Sammy Perone** (HD), “Empirical Tests of a Brain-Based Model of Executive Function Development,” CHILD DEVELOPMENT – Impact Factor 5.9 – 92nd percentile in Developmental Psychology
- **Vikram Yadama** (CMEC, Ext.), **Manuel Garcia-Perez** (BSE), and **Karl Englund** (CMEC, Ext.), “Interrelationship between lignin-rich dichloromethane extracts of hot water-treated wood fibers and high-density polyethylene (HDPE) in wood plastic composite (WPC) production,” HOLZFORSCHUNG – Impact Factor 1.9 – 93rd percentile in Paper & Wood Materials Science
- **Jia Yan** (SES), “Modeling airport capacity choice with real options,” TRANSPORTATION RESEARCH PART B-METHODOLOGICAL – Impact Factor 4.8 – 96th percentile in Civil Engineering
- **Lee Kalcsits, Stefano Musacchi, Desmond Layne** (Hort.), and **Sindhuja Sankaran** and **Lav Khot** (BSE), “Above and below-ground environmental changes associated with the use of photosensitive protective netting to reduce sunburn in apple,” AGRICULTURAL AND FOREST METEOROLOGY – Impact Factor 4.8 – 99th percentile in Forestry
- **Dan Thorton** (SoE), “Ecological niche differentiation across a wolf-coyote hybrid zone in eastern North America,” DIVERSITY AND DISTRIBUTIONS – Impact Factor 5.7 – 91st percentile in Biodiversity and Conservation
- **Bin Yang** (BSE), “Biodegradation of alkaline lignin by *Bacillus ligninphilus* L1,” BIOTECHNOLOGY FOR BIOFUELS – Impact Factor 7.4 – 93rd percentile in Energy and Fuels
- **Brittany Cooper** (HD), “One or two years of participation: Is dosage of an enhanced publicly funded preschool program associated with the academic and executive functioning skills of low-income children in early elementary school?” EARLY CHILDHOOD RESEARCH QUARTERLY – Impact Factor 3.1 – 93rd percentile in Education & Educational Research
- **Shaojin Wang** (BSE), “Influence of controlled atmosphere on thermal inactivation of *Escherichia coli* ATCC 25922 in almond powder,” FOOD MICROBIOLOGY – Impact Factor 4.2 – 93rd percentile in Food, Science & Technology

- **Tarah Sullivan** (CSS), “Differences in antimicrobial activity of chlorine against twelve most prevalent poultry-associated *Salmonella* serotypes,” *FOOD MICROBIOLOGY* – Impact Factor 4.2 – 93rd percentile in Food, Science & Technology
- **Gregmar Galinato** (SES), “Welfare implications of the renewable fuel standard with an integrated tax-subsidy policy,” *ENERGY ECONOMICS* – Impact Factor 3.6 – 94th percentile in Economics
- **Manuel Garcia-Perez** (BSE), “Effect of pyrolysis temperature on aromatic cluster size of cellulose char by quantitative multi cross-polarization C-13 NMR with long range dipolar dephasing,” *CARBON* – Impact Factor 6.8 – 90th percentile in Materials Science
- **Sara Waters** (HD), “Affect contagion between mothers and infants: Exploring the role of valence and touch,” *JOURNAL OF EXPERIMENTAL PSYCHOLOGY: GENERAL* – Impact Factor 5.9 – 96th percentile in Experimental Psychology
- **Bin Yang** (BSE), “Effects of Lignin Structure on Hydrodeoxygenation Reactivity of Pine Wood Lignin to Valuable Chemicals,” *ACS SUSTAINABLE CHEMISTRY & ENGINEERING* – Impact Factor 6.0 – 94th percentile in Chemical Engineering
- **Vikram Yadama** (CMEC, Ext.), “Effects of hot water extraction (HWE) of Douglas fir as a pre-process for the sulfite pretreatment to overcome recalcitrance of lignocellulose (SPORL),” *HOLZFORSCHUNG* – Impact Factor 1.9 – 93rd percentile in Paper & Wood Materials Science
- **Martin Maquivar** (AS), “Effect of serum calcium status at calving on survival, health, and performance of postpartum Holstein cows and calves under certified organic management,” *JOURNAL OF DAIRY SCIENCE* – Impact Factor 2.8 – 96th percentile Dairy & Animal Science
- **Manuel Garcia-Perez** (BSE), “Single particle model for biomass pyrolysis with bubble formation dynamics inside the liquid intermediate and its contribution to aerosol formation by thermal ejection,” *JOURNAL OF ANALYTICAL AND APPLIED PYROLYSIS* – Impact Factor 3.9 – 90th percentile in Spectroscopy
- **Craig Morris** (CSS), “Evidence of intralocus recombination at the Glu-3 loci in bread wheat (*Triticum aestivum* L.),” *THEORETICAL AND APPLIED GENETICS* – Impact Factor 4.1 – 99th percentile in Horticulture
- **Bin Yang** (BSE), “One-Pot Process for Hydrodeoxygenation of Lignin to Alkanes Using Ru-Based Bimetallic and Bifunctional Catalysts Supported on Zeolite Y,” *CHEMSUSCHEM* – Impact Factor 7.9 – 95th percentile in Green and Sustainable Science and Technology
- **James Harsh** (CSS) and **Manuel Garcia-Perez** (BSE), “Quantitative Effects of Biochar Oxidation and Pyrolysis Temperature on the Transport of Pathogenic and Nonpathogenic *Escherichia coli* in Biochar-Amended Sand Columns,” *ENVIRONMENTAL SCIENCE & TECHNOLOGY* – Impact Factor 6.4 – 94th percentile in Environmental Sciences
- **Vikram Yadama** (CMEC, Ext.), “Fabrication and characterization of Nylon 6/cellulose nanofibrils melt-spun nanocomposite filaments,” *COMPOSITES. PART A, APPLIED SCIENCE AND MANUFACTURING* – Impact Factor 4.5 – 97th percentile in Manufacturing Engineering

REVIEWS/BOOKS

- **Kate Evans** (Hort.), edited a landmark reference book, “Achieving sustainable production of apples” that comprehensively examines the cultivation of apples as a food crop at each step in the value chain, from breeding through to post-harvest storage. Chapters were produced from an international team of experts. Evans and 10 other WSU scientists authored 10 of the books 22 chapters including **Amit Dhingra** (Hort.), **Stefano Musacchi** (Hort.), **Qin Zhang** (BSE), **Manoj Karkee** (BSE), **Lav Khot** (BSE), **Kenneth Eastwell** (PP), **Elizabeth Beers** (Hort.), **Karina Gallardo** (SES), **Desmond O'Rourke** (SES), and **David Granatstein** (CSS). View a YouTube synopsis [here](#).
- **Mark Lange** (IBC) and **Jill McCluskey** (SES), “National Academies report has broad support,” *NATURE BIOTECHNOLOGY* – Impact Factor 46.2 – 99th percentile in Biotechnology & Applied Microbiology
 - This report is a product of the US National Academy of Sciences (NAS) Board of Agriculture and Natural Resources, which held a forum last December on Genetically-Engineered Crops: Experiences and Prospects
- **Cameron Peace** (Hort.), “DNA-informed breeding of rosaceous crops: promises, progress and prospects,” *HORTICULTURE RESEARCH*

- **Markus Flury** (CSS), "Modeling soil processes: review, key challenges, and new perspectives," VADOSE ZONE JOURNAL
- **David Crowder** (Ent.), "The impacts of spatial and temporal complexity across landscapes on biological control: A Review," CURRENT OPINION IN INSECT SCIENCE – Impact Factor 3.7 – 95th percentile in Entomology
- **Chad Kruger** (CSANR) and **Rita Hummel** (Ext., Hort.), "Approaches for adding value to anaerobically digested dairy fiber," RENEWABLE & SUSTAINABLE ENERGY REVIEWS – Impact Factor 7.9 – 94th percentile in Energy & Fuels
- **Hanwu Lei** (BSE), "Effects of feedstock characteristics on microwave-assisted pyrolysis - A review," BIORESOURCE TECHNOLOGY – Impact Factor 5.7 – 96th percentile in Agricultural Engineering
- **Hanwu Lei** (BSE), "A review of catalytic microwave pyrolysis of lignocellulosic biomass for value-added fuel and chemicals," BIORESOURCE TECHNOLOGY – Impact Factor 5.7 – 96th percentile in Agricultural Engineering
- **Juming Tang** and **Shyam Sablani** (BSE) and **Joseph Powers** (SFS), "Thermal pasteurization of ready-to-eat foods and vegetables: Critical factors for process design and effects on quality," CRITICAL REVIEWS IN FOOD SCIENCE AND NUTRITION – Impact Factor 6.5 – 96th percentile in Food, Science & Technology
- **Vikram Yadama** (CMEC, Ext.), Book Chapter "Next-Generation Products and Greenhouse Gas Implications. In Deanna H. Olson and Beatrice Van Horne (Eds.)" in *People, Forests, and Change - Lessons From the Pacific Northwest*. Island Press.

Research & Extension Events

WSU Mount Vernon REC Cider & Perry Production – A Foundation, April 24-28, 2017. Sixteen (16) people attended this five-day course, which involved hands-on practical lab work, lectures, workshops, and cider tastings. Main activities included: A detailed step-by-step guide to cider and perry production; An understanding of the chemistry and microbiology behind cider and perry; Practical training in the key skills of cider production and methods of laboratory analysis; Introduction to sensory analysis of cider and perry; Information on the business of cider – taught by Marcus Robert of Tieton Cider Works; and an optional CINA Foundation Certificate exam. Contact: **Bri Ewing** (SFS, Ext.)

WSU Mount Vernon REC Cider Apple Orcharding Workshop, April 29, 2017. Twenty-three (23) people attended this class, which taught the fundamentals of growing cider apples in the Pacific Northwest. Hard cider production and sales have dramatically increased over the last decade, and cidermakers are interested in cider-specific apple cultivars now more than ever. However, these apples are oftentimes in short supply and difficult to obtain. The next cider workshop will be held the week of October 9th. Contact: **Bri Ewing** (SFS, Ext.)

WSU Weed Science Field Day, June 14, 2017. Forty (40) people attended the annual Weed Science Field Day. Participants were chemical company representatives, crop consultants, and farmers. The group toured field research plots near Albion, WA and at the Cook Farm. Weed control in winter wheat, spring wheat, and chickpeas was discussed. A small social hour followed the tour. Contact: **Drew Lyon** (CSS)

Lind Field Day – June 15, 2017 (WSU Dryland Research Station). Two-hundred and fifty-nine (259) attendees were present at the annual Lind Field Day, about 90% of whom were dryland wheat growers. At this event, farmers learned about the latest Washington State University discoveries in solving low falling numbers; perennial wheat; winter, club and spring wheat breeding; winter pea breeding; and application of biosolids. WSU administrators, state legislature and wheat industry leaders all provided updates during the noon program. The Lind Field Day continues to attract the largest attendance of any university field day in the PNW. Contact: **Bill Schillinger** (Director, WSU Dryland Research Station).

WSU Wilke Farm Soil Quality Field Day – June 28, 2017 (Davenport, WA). Dry-land wheat and barley production is the primary industry in the Lincoln and East Adams County Area. WSU Faculty and specialists work with stakeholders to solve agronomic issues, provide education and information on innovative crop production methods, pest identification and management, and new seed varieties. Several topics were discussed at the annual field day, including healthy soil characteristics (compaction, water infiltration, and soil organic matter); nutrient application (soil pH and balanced soils for increased production); and managing soil variability (site specific nutrient application, and drone and aerial imagery

technology). Palouse soils face increasing threats and have developed acidic (low pH) conditions that reduce production, increase diseases, and contribute to herbicide carryover herbicide carry-over.

Contact: **Paul Carter** (Ext.)

WSU Extension Highlights

SPECIAL TOPICS

- The William D. Ruckelshaus Center will be welcoming former US Secretary of State, **Condoleezza Rice**, as the speaker at its 7th Annual Chairman's Circle Luncheon on October 16 in downtown Seattle. For more information, please contact **Michael Kern** m.kern@wsu.edu or **Cheryl Rajcich** cherylr@wsu.edu.

NATIONAL PUBLICATIONS

- **Charles Burke, Karl Englund, Michael Gaffney, Michael Kern, and Vikram Yadama** (along with colleagues from multiple universities) published the Final Report, “[Informing and Engaging Stakeholders](#),” which describes the Northwest Advanced Renewable Alliance (NARA)’s outreach activities used to enhance bioenergy literacy and build supply chain coalitions and regional alliances.
- **Trevor Lane and Jordan Tampien**, “Understanding Access to Capital Issues for Entrepreneurs Through Simulations,” Access to capital is a major barrier for entrepreneurs. Most businesses are not aware of the various options to find affordable capital. To meet this need, an interactive, educational simulation called Pitchfest was developed as an innovative approach to teaching the very complex topic of entrepreneurship and access to capital. This publication discusses the foundational elements of Pitchfest, how it works in action, and culminates in the rules, structure, and outcomes of playing Pitchfest with any age group from children to adult educators.
- **Brad Gaolach** (Ext. Metro Center), **Christina Sanders** (Ext. DGSS), and **Michael Kern** (Ext., William D Ruckelshaus Center), “Urban Extension: Aligning with the Needs of Urban Audiences Through Subject-Matter Centers.” This article was published in a special issue of the Journal of Human Sciences and Extension and explores how centers can add capacity to traditional Extension offices and meet city needs.

AWARDS

- **Trevor Lane** (WSU Ferry County Extension Director and Assistant Professor) has been nominated and selected by his peers to receive an [Achievement Award](#) through the National Association of County Agricultural Agents (NACAA). The Achievement Award is given to Extension professionals with less than 10 years of service in Cooperative Extension Service who have exhibited excellence in the field of professional Extension. Trevor Lane’s leadership in community and economic development, technology, and agritourism programming has led to presentations at state, national and international workshops in agritourism, especially as it relates to rules and regulations. He presented at NACAA in 2016 on best practices with storytelling and agritourism videos and was invited again in 2017 to present a webinar about the availability of smartphone technology for Extension professionals. He is also the co-creator of the WSU Community Intelligence Lab, a rural community think-tank that combines open data, science and citizen inquiry to address rural problems in Washington.
- **Debra Hansen and Monica Babine** engaged Extension’s network of faculty and community relationships for a statewide outreach success. WSU Extension’s award-winning [Pathways to Prosperity model](#), a virtual rural economic development conference, inspired 855 regional attendees at 26 regional locations to join the Governor’s Summit on Career Connected Learning. Over 35 Extension faculty and staff helped make this a successful statewide event by working with over 70 community partners and WSU colleagues. As stated in the Washington workforce development report to the National Governors Association, “Engaging with WSU Extension was critical to making this a wildly successful event, they have links with many of the communities and a recognized brand that validated the concept and opened many doors for new sites. WSU Extension possessed significant expertise in engaging the rural areas in messaging and marketing, and we were very fortunate to partner with them for the Summit, we all benefited from their existing network.”
- **Foresters receive awards by the Association of Natural Resource Extension Professionals (ANREP)**. Two Extension faculty members won awards this year from the Association of Natural Resource Professionals for their

efforts connecting with forest- and landowners. **Kevin Zobrist**, associate professor and Extension Forester, received a Silver Award with Oregon State's Lauren Grand for their project, "Property Ownership and Land-Use History for your Forest Stewardship Plan." This series offers step-by-step instructions for completing an ownership and land-use history, explaining how to use records websites for Island, King, San Juan, Skagit, Snohomish, and Whatcom Counties. Zobrist also received a Bronze Award with Grand for their project, "Reducing Fire Risk to your Western Washington Home in the Woods." **Andy Perleberg**, WSU Regional Extension Specialist and Forestry Team Leader; received the silver award for the Woodland Fish and Wildlife Group's "Series of Articles." Authors sharing this award include **Nicole Strong, Richard Zabel, Ken Bevis, Steve Gibbs, Tami Miketa, Brad Siemens, Susan Barnes, Jimmy Taylor, Misty Seabolt, Fran Cafferata Coe, Julie Woodward, Dana Sanchez, Carri Gaines, Michael Ahr, Jim James, Rhidian Morgan, Jennifer Weikel, Ryan Gordon, Nicole Ahr, Candice Polisky, Dominic Bachman, and Rod Pfeifle**. These practical "how to" publications are written specially for small forest owners in the Pacific Northwest. Over 20 available titles cover fish and wildlife habitat, management considerations, and practical advice for landowners. View them at www.woodlandfishandwildlife.com.

- The WSU Extension Tree Fruit team, led by **Karen Lewis**, is the recipient of a national Extension Materials Award from the American Society for Horticultural Science, for their WSU Tree Fruit website. Team members include **Rob Blakey, Tianna DuPont, David Granatstein, Gwen-Alyn Hoheisel, Wendy Jones, Karen Lewis, Jim McFerson, Ines Hanrahan, Tory Schmidt and Tom Auvil**. Lee Kalcsits and **Danial Bleile** were also involved in the project, which was made possible by support from the WSU Tree Fruit Endowment.
- **Sheila Gray**, director of Lewis County Extension, is the recipient of the 2017 National Association of County Agricultural Agents' Distinguished Service Award for Washington State. The award honors professionals with more than 10 years of service in cooperative extension who show excellence in their field. Gray has been with WSU Extension for 22 years. She is a member of the state and national agents' associations.
- **Ag Association awards for Kerr, Higginbotham, McMoran, Carter, Murray and Wohleb.** **Susan Kerr**, Regional Livestock and Dairy Extension Specialist, led CAHNRS recipients earning awards from the National Association of County Agricultural Agents. Kerr was a regional award winner for Audio Recording, and a national finalist for Published Photo & Caption; Team Newsletter; Fact Sheet; and Publication. **Ryan Higginbotham**, assistant professor and director of the WSU Cereal Variety Testing Program, was a national finalist for Feature Story, and a region winner for Bound Book and Web Site/Online Content. **Don McMoran**, Skagit County Extension director, was a state winner for Extension Education Poster Presentation, with the option to advance to nationals. He was also a state winner for Search for Excellence in Forestry & Natural Resources and Search for Excellence in Young, Beginning, or Small Farmers/Ranchers. **Paul Carter**, Regional Extension Agronomist – Agriculture and Precision Farming, was a state winner for Applied Research Poster Presentation, with the option to advance to nationals. **Todd Murray**, director of the Agricultural and Natural Resources Extension Program Unit, was a state winner for Search for Excellence in Consumer & Commercial Horticulture. **Carrie Wohleb**, Regional Vegetable Crops Specialist, was a national finalist for Individual Newsletter.

The National Association of Community Development Extension Professionals (NACDEP) and Community Development Society (CDS) Joint Conference was held on June 14th in Big Sky, MT. CAHNRS Extension was well-represented with multiple regional and national awards. These include:

- **Debra Hansen, Rebecca Sero, Lorie Higgins** (CED Adjunct; University of Idaho Ext.) and colleagues from the University of Minnesota and South Dakota State, were presented with the 2017 Joint National Association of Community Development Extension Professionals (NACDEP) and Community Development Society (CDS) Team Award. The award exemplifies the CDS Principles of Good Practice and vision of NACDEP and recognizes this team for the collaborative Ripple Effects Mapping (REM) creation, refinement, and work using it across five western and mid-western states. The team was recognized for their generosity in sharing REM and the tremendous benefits it provides for Extension and communities where it is used.
- **José García-Pabón** was the 2017 National Association of Community Development Extension Professionals (NACDEP) Western Regional Diversity Award winner for his Latino Community Studies and Outreach Program. He was also the national runner up.
- **Lauren Grand and Kevin Zobrist** (Silver Award for long publication: "Property Ownership and Land-Use History for your Forest Stewardship Plan. Association of Natural Resources Extension Professionals.")

- **Lauren Grand and Kevin Zobrist** (Bronze Award for Web Sites/Social Media/Online Courses: “Reducing Fire Risk to your Western Washington Home in the Woods online module. Association of Natural Resources Extension Professionals.”)
- **Andy Perleberg, Nicole Strong, Dana Sanchez** (Silver Award for Newsletter/Series of Articles -)
- **Sheila Gray** (Computer Generated Graphics Presentation with Script - National Finalists)
- **Susan Kerr** (Audio Recording - Region Winners); (Published Photo & Caption - National Finalists); (Team Newsletter - National Finalists); (Fact Sheet - National Finalists); (Publication - National Finalists)
- **Ryan Higginbotham** (Feature Story - National Finalists)
- **Carrie Wohleb** (Individual Newsletter - National Finalists)
- **Ryan Higginbotham** (Web Site/Online Content - Region Winners); (Bound Book - Region Winners)
- **Todd Murray** (Search for Excellence in Consumer & Commercial Horticulture - State Winner)
- **Steve Norberg** (Search for Excellence in Crop Production - State Winner)
- **Don McMoran** (Search for Excellence in Forestry & Natural Resources - State Winner); (Search for Excellence in Young, Beginning, or Small Farmers/Ranchers - State Winner); (Extension Education Poster Presentation - State Winner w/option to advance to national)
- **Paul Carter** (Applied Research Poster Presentation - State Winner w/option to advance to national)

Student News

- **Evan Craine** (PhD, CSS) was awarded a NSF Graduate Research Fellowship, which recognizes and supports outstanding graduate students in NSF-supported science. Link: https://www.nsfgrfp.org/general_resources/about
- Work from **John Spring** (PhD, CSS) that describes resistance to glyphosate herbicides in Russian thistle was highlighted in a web exclusive of The Furrow magazine (published by John Deere). See the full article [here](#).
- **Julie Mercado** won the 2017 President's Award for Leadership. Julie is a senior majoring in psychology, minoring in Human Development and is also earning the Certificate in Human Services.
- **Julian Rivas** was awarded the Vancouver Chancellor's Award for Student Achievement. Julian will graduate with Bachelor of Arts in social sciences, with a concentration in PP/HR and a Certificate in Human Services.
- **Ashley Stroh**, Vancouver HD student, was named the Outstanding Senior and was the banner carrier during the commencement ceremony.
- The new WSU Wenatchee Graduate Student Association (WGSA) received official recognition as a Registered Student Organization (RSO) in April 2017. Currently led by Horticulture graduate students **Brendon Anthony** and **Sarah Kostic**, there are 15 graduate student members, with four elected officers. The WGSA was granted \$1,422 from the GPSA for the Fall Semester to facilitate communal and educational opportunities.
- **Cedric Habiyaremye** (PhD, CSS) was awarded a U.S. Borlaug Fellowship in Global Food Security. In addition, at the Borlaug Summer Institute at Purdue University, his team was awarded best project presentation and won a trip to attend the 2017 World Food Prize in Des Moines, Iowa. Link: <https://www.facebook.com/pcgfs/>
- **David Sullivan** (Puyallup – Soils) and **Shuresh Ghimire** (Mount Vernon – Horticulture) were awarded \$10K graduate student scholarships from the Annie's Sustainable Agriculture National Competition.
- **Shima Bibi** (WSU, PhD) the first recipient of the CAHNR Dean's Excellence Scholarship. Shima is a Fulbright scholar studying how antioxidants affect chronic disease. She is from Pakistan's Khyber Pakhtunkhwa province bordering Afghanistan and upon graduation will return home to improve food security and health across Pakistan and promote education for women in an area with less than 10% literacy.
- **Tai McClellan Maaz**, WSU PhD graduate and current WSU post-doctoral research associate in soil science has been named the International Plant Nutrition Institute (IPNI) Nitrogen Program Director
<http://www.ipni.net/article/IPNI-3459>
- Congratulations to the following students for their achievements at the International meeting for the Institute of Food Technologists, June 25-28 in Las Vegas, NV:

- **Victoria Minette** (BS) for receiving 2nd place and **Emily Walsh** (MS) for receiving 3rd place at the Sensory & Consumer Sciences Division Oral Competition.
- **Noelle Lebow** (MS) for receiving 2nd place at the Food Microbiology Division Oral Competition.
- **Jackie Lipkowitz** (MS) for receiving 3rd place at the Dairy Foods Division Oral Competition.
- **Zachary Cartwright** (PhD) for receiving 1st place at the Quality Assurance Division Poster Competition and 1st place in the IFTSA Thesis Video Competition. Zachary will be off to Campden BRI in the UK as part of the award. This was an off-shoot from his 3rd place win in the campus wide 3-min thesis competition this spring.
- Congratulations to **Lauren Rooney, Maria Dian Pratiwi Masli, Jie Xu, Bon-Jae Gu, Jackie Lipkowitz, Siyuan Wang**, and **Zachary Cartwright** for receiving (each) a \$1,500 scholarship from Puget Sound_Institute of Food Technologists.

Facilities, Infrastructure & Programmatic

Cameron Burt, Orchard Manager at WSU Wenatchee Tree Fruit Research and Extension Center was awarded a \$3,000 scholarship to attend the annual meeting of the International Fruit Tree Association in New Zealand, Feb 25-Mar 8, 2018. The TFREC is home to the Columbia View and Sunrise Orchards that comprise a total of 200 acres for research and breeding purposes.

The Human Development Child Development Program (CDP) in Vancouver is the first program in its classification to receive a 5-star rating (the highest possible rating) available through Early Achievers.

Vince Jones (Ent.) will release the WSU-Tree Fruit Decision Aid system (WSU-DAS) as a beta version in July to British Columbia fruit growers, providing them internet access to their regional weather networks, commercial weather forecasts, and management recommendations. WSU-DAS is used on >85% of the tree fruit acreage in Washington State to help growers and pest consultants plan and time management activities for insects, diseases and horticultural issues. The full version will go live January 2018 and revenues used to help develop and maintain both the Washington State and British Columbia versions of the program.

The WSU Metropolitan Center for Applied Research and Extension has been selected to host National Urban Extension Conference in 2019 in Seattle. The conference has not visited the West since 1996. The Metro Center will be the local host in collaboration with the National Urban Extension Leaders (<http://nuelaction.org>). The Metro Center welcomes individuals to join the planning committee to showcase CAHNRS work and impact in metropolitan communities across the state. To get involved, send an email to Metro.Center@wsu.edu with 'NUEC19' as the subject. The conference is slated for May 14, 2019. Learn more here. <https://sites.google.com/view/nuec2019/home>

Notes on the Creamery. Ferdinand's has been named the best ice cream shop in Washington State (<https://bestthingswa.com/ice-cream-parlors/>)! Much time was spent organizing the Future Farmers of America events in May with 200⁺ students in attendance at SFS and dairy events. Mom's weekend and graduation were also very busy times for the Creamery. The Smoked Cougar Gold rounds (with the Cougar head in relief) sold very well. Creamery staff participation in Alive and FFA (200⁺ students) events is always well received. Funds are being raised to improve process control and **Linda Bailey** (Director, CAHNRS Development) is planning fundraising efforts for the pilot scale filtration and fractionation equipment. The BUILD Dairy contingency will be on campus (July 19-20) to view the new construction, which is scheduled to be complete by the end of June.

Ribbon-Cutting Ceremony for New WSDA Greenhouse at IAREC (Prosser, WA). The Washington State Department of Agriculture (WSDA) dedicated the agency's new state-of-the-art greenhouse on May 11 in Prosser. The greenhouse will support the state's tree fruit industry. It is nearly 4,800 square feet and is built on 7.5 acres leased from WSU. The Fruit Tree Planting Stock Certification Program has nearly 35,000 registered mother trees that serve as a source for the propagation of trees that will provide millions of high quality trees to the tree fruit industry each year. The trees are grown by WSDA-certified nurseries that acquire stock from the Clean Plant Center- Northwest, also located at WSU's IAREC, which is part of the National Clean Plant Network. It is one of only three clean plant centers for fruit trees in the U.S. Construction of the greenhouse and installation of specialized equipment took more than two years to complete. The project cost \$750,000 using funds provided through assessments on nurseries that sell Washington-grown fruit trees. Contact: **Mike Louisell**, Washington State Department of Agriculture