



## CAHNRS COMMUNICATIONS

In the month of September, CAHNRS Communications Office published **11** Online Articles that highlight accomplishments in Academic Programs, Research and Extension. A selection is given below.

### Awards

**National Agricultural Alumni and Development Association First Place**, Print Division, Stewardship Materials Category, CAHNRS Campaign Council Poster

### Top News Stories

- [Public invited to help plan, design for sea level rise](#) By Scott Weybright | Published September 14  
Appeared in Design in Public, Twitter, other outlets
- [Landscape architecture students present Moscow Farmers Market designs](#) By Seth Truscott | Published September 9  
Appeared in Daily Evergreen, Moscow-Pullman Daily News, Moscow Chamber of Commerce, Growing Washington, Scholarship Next
- [Harvest celebration at WSU Organic Farm](#) By Scott Weybright | Published September 19  
Appeared in Tilth Producers of Washington, social media
- [Fruitful research: Stefano Musacchi helps apple, pear growers](#) By Seth Truscott | Published Sept. 7  
On Solid Ground blog post, picked up by Lewiston Morning Tribune

### Social Media

[Facebook](#)    21 posts    558 likes    38,768 reached    2,661 fans (up 4.5%)

Top Post: [Faculty Profile: J.D. Baser](#)

[Twitter](#)    102 tweets    52,134 impress.    2,120 engagements    4,008 followers (up 2.4%)

Top Tweet: [Harvest Festival announcement](#)

## RESEARCH – FACULTY HIGHLIGHTS

- **Hanu Pappu** (PP) received a prestigious **Fulbright Distinguished Chair** award from the U.S. Fulbright Commission. The award is the **highest recognition** given by the Fulbright (3-4 annual awards). He will teach and conduct research at the University of Brasilia (Brasilia, Brazil).
- **Kristen Johnson** (AS) was invited to join the **EPA Science Advisory Board – Agricultural Science Committee** from 2016-2019.
- **Barbara Rasco** (SFS) was an invited speaker for the Washington Association for Food Protection with food safety leaders from across the Pacific Northwest, including federal representatives.
- **Girish Ganjyal** (SFS) was a guest speaker at the US Food and Drug Administration Pacific Region Retail Food Seminar in Reno, NV on 20 September on roles of a process authority.
- **Min Du** (AS) was selected to be a **Fulbright Specialist** with a month long trip to Indonesia.
- **Naidu Rayapati** (PP) gave an invited presentation “IPM as a strategic approach for management of virus diseases in vegetable crops in the tropics” at the **XXV International Congress of Entomology** (ICE).
- **Laura Lavine** (Entomology) gave an invited presentation “Mechanisms of condition-dependent trait growth in the weapons of sexual selection: Insights from the beetles” at the **XXV ICE**.

- **Linda Bradley** (AMDT) was invited to speak at the Eastern Mennonite University of Virginia in Harrisonburg, VA on her 20 plus years of research on Mennonite women under patriarchy. The conference is titled “Crossing the Line: Women of Anabaptist Traditions Encounter Borders and Boundaries.” ([here](#))
- **Dave Crowder** (Entomology) received the prestigious **Early Career Excellence in Research Award** from the **International Organization of Biological Control**. This award is given annually to a promising early career researcher studying natural pest control of arthropods.
- **Tim Murray** (PP) spoke at the “Sustainable Food Security in ASEAN – Role of Genetics and New Technologies” conference, Sept. 5-7 in Singapore and Kuala Lumpur, Malaysia. His talk, “Challenges for Agriculture and Food Production: Understanding Plant Pathology,” introduced scientists and policymakers in the food production industries to the importance of plant diseases and how to manage them using new tools for genetic manipulation.
- **Qin Zhang** (BsystE) was invited to visit Xinjing Agricultural University and Talimu University in China to give a seminar on agricultural automation and introduce agricultural automation research at WSU. Qin Zhang was invited under a China Agricultural University “**World Famous Professor**” Project sponsored by the **Chinese Ministry of Education**. This project aims to invite internationally renowned professors to Chinese universities.
- On Sep 27-29, **Tom Collins** and **Thomas Henick-Kling** (VE), went to Washington DC with **Melissa Hansen** (WS Wine Commission Research Program Manager) to educate US representatives and congressional staff on the problem of smoke taint in wines and to encourage funding to address this problem and others in VE. The presentations were met with much interest among congressional staff and representatives as well as with research program managers from NIFA, FFAR and NSF.
- **Debbie Christel** (AMDT) is working with First lady and Professor, **Noel Schultz** on designing and developing COUGAR sprit wear for women. After collecting and analyzing data from over 1000 women concerning needs and wants in this underserved market, **AMDT undergraduate design students have designed and are beginning to develop prototype garments**. Selected final projects will be manufactured and sold to women across the COUGAR nation.
- **Girish Ganjyal** (SFS) was recently certified as a Trainer of Trainers, or ToT, by the Food Safety Preventive Controls Alliance (FSPCA). **He is one of just 31 ToTs in the United States**.

## RESEARCH – GRANT FUNDING

*In the month of September, CAHNRS faculty received **\$3M\*** in extramural support in the form of new/ongoing grants, contracts, agreements and services rendered. A selection of new awards (with award total) is given below:*

- **Laura Hill, Matt Bumpus** and **Brittany Rhoades-Cooper** (HD) were awarded a **\$3.2M R01** from the **NIH-National Institute on Drug Abuse (NIDA)** to develop and validate a new, low-cost, easy-to-implement, evidence-based tool for college administrators that will significantly reduce risk behaviors, injuries, sexual assault, and deaths among first-year students.
- **Kevin Murphy** (CSS) was awarded a **\$2M** Organic Research and Extension Initiative (**OREI**) grant from the **USDA** that will support breeding and agronomy of quinoa for organic farming systems in the U.S.
- **Donald McMoran** (Ext.) was awarded a **\$450K** Conservation Innovation Grant (**CIG**) from the **USDA** to increase irrigation efficiencies throughout Washington by encouraging adoption of proven irrigation monitoring technology, irrigation efficient equipment and conservation practices.

- **Joseph Harrison** (AS) was awarded a **\$450K CIG** from the **USDA** to demonstrate technologies that can improve cost efficiency of transporting manure nutrients from regions of dense populations of animal agriculture operations to areas that have a demand for manure nutrients.
- **John Browse** (IBC) was awarded a **\$380K AFRI** from the **USDA** (lead institution Michigan State) that will use systems biology to improve Camelina seed and oil quality traits.
- **Doug Walsh** (Entomology) was awarded a **\$240K Alfalfa and Forage Research Program (AFRP)** grant from **USDA** to conduct research and outreach to improve pollination services to high-value Western U.S. alfalfa seed grown as a non-food/non-feed crop.
- **Doug Walsh** (Entomology) was awarded a **\$320K Crop Protection and Pest Management (CPPM)** grant from the **USDA** to develop and deliver IPM strategies to the rapidly expanding U.S. hop industry.
- **Amber Adams-Progar** (AS) was awarded a **\$150K** grant from the **NIH** (lead institution UW) to study injury and illness prevention in the Pacific Northwest for the dairy industry.

## RESEARCH – PUBLICATIONS

*CAHNRS faculty published a total of 60 articles in peer-reviewed journals and conference proceedings, which are cataloged online in our Weekly Published Research Archive ([available here](#)). A selection of these publications is provided below with hyperlinks.*

### Impactful in Their Fields

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- “AMPK/α-Ketoglutarate Axis Dynamically Mediates DNA Demethylation in the *Prdm16* Promoter and Brown Adipogenesis” *CELL METABOLISM* – **Impact Factor 17.6** – **Qiyuan Yang, Dan Rodgers and Min Du** (AS) ([here](#)), 96<sup>th</sup> percentile journal in Cell Biology
- “Identification of peanut (*Arachis hypogaea*) chromosomes using a fluorescence in situ hybridization system reveals multiple hybridization events during tetraploid peanut formation” *NEW PHYTOLOGIST* – Impact Factor 7.7 – **Li Tian** (IBC) ([here](#)), 98<sup>th</sup> percentile journal in Plant Sciences

### Discovery

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- “Male tarsi specific odorant-binding proteins in the diving beetle *Cybister japonicus* sharp” *SCIENTIFIC REPORTS* – Impact Factor 5.3 – **Fang Zhu** (Entomology) ([here](#))
- “Controls on carbon storage and weathering in volcanic soils across a high-elevation climate gradient on Mauna Kea, Hawaii” *ECOLOGY* – Impact Factor 5.2 – **Marc Kramer** (SoE) ([here](#))
- “The Grizzly Lake complex (Yellowstone Volcano, USA): Mixing between basalt and rhyolite unraveled by microanalysis and X-ray microtomography” *LITHOS* – Impact Factor 4.4 – **Peter Larson** (SoE) ([here](#))
- “An Ethylene-Protected Achilles’ Heel of Etiolated Seedlings for Arthropod Deterrence” *FRONTIERS IN PLANT SCIENCE* – Impact Factor 5.0 – **Sachin Rustgi and Diter von Wettstein**, (CSS) ([here](#))
- “The Tomato Spotted Wilt Virus Genome Is Processed Differentially in its Plant Host *Arachis hypogaea* and its Thrips Vector *Frankliniella fusca*” *FRONTIERS IN PLANT SCIENCE* – Impact Factor 5.0 – **Hanu Pappu**, (PP) ([here](#))
- “Genetic Architecture of Resistance to Stripe Rust in a Global Winter Wheat Germplasm Collection” *G3-GENES GENOMES GENETICS* – Impact Factor 3.2 – **Michael Pumphrey** (CSS) ([here](#))

## Translational and Collaborative

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- “Performance of a Heating Block System Designed for Studying the Heat Resistance of Bacteria in Foods” SCIENTIFIC REPORTS – Impact Factor 5.3 – **Shaojin Wang** (BsysE) ([here](#))
- “Participant and Household Characteristics Associated With Graduation From the Expanded Food and Nutrition Education Program” JOURNAL OF NUTRITION EDUCATION AND BEHAVIOR – Impact Factor 2.2 – **Brittany Rhoades-Cooper** (HD) **Karen Barale** (Ext.) and **Thomas Power** (HD) ([here](#))
- “Genetic Differentiation, Isolation-by-Distance, and Metapopulation Dynamics of the Arizona Treefrog (*Hyla wrightorum*) in an Isolated Portion of Its Range” PLOS ONE – Impact Factor 3.2 – **Caren Goldberg** (SoE) ([here](#))
- “Agricultural land usage transforms nitrifier population ecology” ENVIRONMENTAL MICROBIOLOGY – Impact Factor 3.7 – **Steven Fransen** (CSS) ([here](#))
- “Development of SCAR markers linked to *sin-2*, the stringless pod trait in pea (*Pisum sativum* L.)” MOLECULAR BREEDING – Impact Factor 2.1 – **Dorrie Main** (Hort.) ([here](#))

## Invited Reviews/Books/Articles

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- “Catalytic co-pyrolysis of lignocellulosic biomass with polymers: a critical review” GREEN CHEMISTRY – Impact Factor 8.0 – **Shulin Chen, Joan Wu** and **Hanwu Lei** (BsysE) ([here](#))
- “Molecular Weight Effects on Enthalpy Relaxation and Fragility of Amorphous Carbohydrates” Water Stress in Biological, Chemical, Pharmaceutical and Food Systems – **Shyam Sablani** (BsysE) ([here](#))
- “Exporting Spatial Externalities” OPEN ECONOMIES REVIEW – Impact Factor 0.8 – **Andrew Cassey** (SES) ([here](#))
- “Pyrolysis Oil Multiphase Behavior and Phase Stability: A Review” ENERGY & FUELS – Impact Factor 2.7 – **Manuel Garcia-Perez** (BsysE) ([here](#))

## RESEARCH & EXTENSION – EVENTS

### **WSU Food & Agriculture Advisory Council Annual Meeting September 9, 2016 Snoqualmie Pass, WA.**

The CAHNRS executive leadership team, along with members from government, state, and alumni relations, met with stakeholders from the cattle, tree-fruit, hops, potato and wheat industries, among others. A number of industry issues were addressed: laying the foundation for the next Dean of CAHNRS, CAHNRS legislative priorities for the 2017-19 biennium, cultivating future WSU-AgriBusiness partnerships, and engaging the next generation of CAHNRS advisors and supporters.

Contact: **Laura Lavine**, Asst. Director – CAHNRS Office of Research

### **COSMIC CRISP™ WA 38 Field Days September 17 and 30, 2016.**

Growers will be planting WA 38 (COSMIC CRISP™) next year. To ease the rollout process, WSU has partnered with the Tree Fruit Research Commission to gather preemptive data on how to best grow and store the new apple variety. In September 2016, **220 growers** attended field days that were held in Quincy and Prosser. This was the 3<sup>rd</sup> in a series of field days on WA 38, which had more than **420 participants overall**. WSU’s Dr. **Stefano Musacchi** and **Karen Lewis** discussed appropriate training and pruning systems, response to mechanical pruning, and potential for top grafting. The Tree Fruit Research Commission’s Tom Auvil and Dr. Ines Hanrahan reviewed fruit quality and horticulture. WSU plant breeders **Kate Evans** and **Bruce Barret** explained the characteristics of this variety and others coming down the breeding pipeline. Growers continued to be positive of the new variety and these field days. **See accompanying YouTube video** ([here](#)). Contact: **Stefano Musacchi**, Horticulture

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Contact: **Laura Lavine**, Asst. Director – CAHNRS Office of Research

### **Organic Seed Alliance – From Field to Fork Community Field Day and Variety Testing September 26, 2016 at Finnriver Orchard Chimacum, WA.**

The event celebrated the second annual harvest at OSA's Washington research farm, which serves as the hub of OSA's Pacific Northwest organic plant breeding, seed education, and variety trial program. Researchers from WSU joined the event to discuss the **OSA-WSU Organic Germplasm Consortium** and report on local quinoa breeding efforts. The research portion of Field Day occurred in the morning and was attended by ~25 people, including local growers, representatives from High Mowing Organic Seed Company's researchers from the University of British Columbia, and Extension faculty from surrounding counties. Contact: **Kevin Murphy**, CSS

### **San Juan Islands Forest Owners Field Day September 17, 2016 at Midnight's Farm Lopez Island, WA.**

The San Juan Islands Field Day is a smaller, local version of the regional field day, which featured a suite of outdoor workshops specifically for people with wooded property in the San Juan Islands. Forestry specialists from around the region provided instruction, demonstrations, and resources throughout the day on a variety of topics that help residents to better understand, protect, enhance, and enjoy the forest.

### **Music and Monarchs August 28, 2016 Yakima Valley, WA.**

On 28 August, roughly **300 people** gathered to release monarch butterflies into the wild, which were reared by Members of the Cowiche Canyon Conservancy. This project was done in collaboration with **David James** (Entomology), who tracks migration patterns of monarchs from the Pacific Northwest. ABC reported four recoveries of PNW Monarchs **that traveled up to 600 miles** to northern California (see video [here](#)). He presented his work to inmates at the Coyote Ridge Correctional Center, Connell, WA this month. Read more ([here](#)).

## **EXTENSION - HIGHLIGHTS**

- Diana Roberts, Professor and Regional Extension Agronomist, was featured in a 29 September **Spokesman Review** article titled "Roberts Gently Motivated Action on Spokane's South Hill Bluff Trails" ([here](#)).
- **L.R. Lewis, D. Collins** and **K. Henwood** presented at **The National Small Farms Conference** hosted by Virginia State University.
- **D. Llewellyn, E. Walker, L. McLean** and **M. Nelson** published the WSU Extension Fact Sheet entitled "Feeding Livestock During and After a Disaster" in response the devastating Okanogan Complex fires, the North Star fire, and others around the state and the Pacific Northwest in 2015 ([here](#)).
- **Kim Patten** was an invited **keynote speaker** at UC Davis for the "Invasive plant eradication and endangered species recovery in coastal and aquatic systems" conference.
- **Eric Larsen**, WSU Extension Volunteer Development Specialist was appointed as a member to the **National Association of Extension 4-H Agents (NAE4-HA)** Board for a two-year term.

- **Linda McLean**, WSU Colville Reservation Extension Director made a presentation entitled “4-H Positive Youth Development Programming on the Colville Reservation” to the NWIAC (Northwest Intertribal Agriculture Council). The meeting had representation from tribal government agencies, BIA (Bureau of Indian Affairs), USDA NRCS & FSA and individual tribal agriculture producers from Idaho, Oregon and Washington Tribes and Reservations.
- **Diane Smith**, WSU Extension Regional Specialist of Skagit and Whatcom County, was honored recently at the National Extension Association for Family and Consumer Science Services 2016 annual session, “Discover, Connect, Engage.” **She received the third place regional Community Partnership Award** at the conference held September 12-15 in Big Sky, Montana. In receiving the award, Ms. Smith was recognized for her leadership in fostering partnerships to explore health promotion and healthy foods for families in Skagit County.
- **Susie Craig**, WSU Extension Snohomish County Professor and her team members **Gayle Alleman Povis** and **Suzanne Ault Boarts** were honored recently at the National Extension Association for Family and Consumer Science Services 2016 annual session, “Discover, Connect, Engage.” **The team received the third place National Educational Curriculum Package Communications.** In receiving the award, Ms. Craig was recognized for “What’s On Your Plate?: Exploring Food Science” which is a national STEM, inquiry-based, food science curriculum for middle school students.

## STUDENT NEWS

- **Carol McFarland**, MS student (CSS), was notified she will receive the **American Society of Agronomy Extension Education Materials Award** at the upcoming international meetings in Phoenix, AZ on November 8, 2016. The award is for a 3-part video extension series she produced on soil acidity: Soil pH [Managing it on the farm](#); [How it happens](#); and [What it looks like](#).
- **Louisa Winkler**, PhD student (CSS), recently published two peer-reviewed journal articles: The history of oats in western Washington and the evolution of regionality in agriculture ([here](#)), and Population Structure and Genotype–Phenotype Associations in a Collection of Oat Landraces and Historic Cultivars ([here](#))
- Congratulations to **Collen Kirk Patterson** and **Matthew Husada** BS students (SFS) for receiving scholarships from the Washington Association for Food Protection meeting September 22-23 for their interest in careers in food safety and the food and beverage industry.
- Congratulations to **Zachary Cartwright** for being awarded the highest general graduate scholarship offered by *Feeding Tomorrow* and his featured article in the August edition *Food Technology Magazine*.
- **Nathan Stacey**, MS student (CSS), was named the graduate student with the best poster at the recent Annual Northwest Biosolids Meeting.
- **Ryan Anderson**, PhD student (SoE) won **first place** at the **Best Student Geologic Map Competition** at the **Geological Society of America annual meeting** in Denver. The title of his entry was “Regional geologic map across the Andean retroarc fold-thrust belt of southern Bolivia: New insights on the Subandean Zone, Interandean Zone, and Eastern Cordillera at 21°S.”
- **Logan Weyand**, a BS student (SoE) is **WSU’s first Udall winner** in the **environment category**. His is also WSU’s first Udall honorable mention award.
- Students from the **Viticulture and Enology Certificate Programs** traveled to the Tri-Cities area for fall wine and grape camps September 10-11. Viticulture certificate students spent time in the research vineyard at the WSU Extension in Prosser, where they learned how to assess ripening, scout for disease and viruses and estimate yields. At Wine Camp, enology certificate students analyzed sugars, acids, tannins, and alcohol in the lab and participated in grape crush at the Ste. Michelle Estates Wine Science Center in Richland.

- Students in the WSU Agricultural Education program recently won a nationwide commercial contest promoting teaching agriculture. The contest was part of **National Teach Ag Day**, observed September 22. The winning team was determined by the number of views the commercial received. **WSU won with almost 4,500 views**. Second place with almost 3,000 views was Kansas State University; Texas A&M University took third place. The student video team was led by **Jacklyn Bennett**, with assistance from **Rení Lucido** and **Shania Simons**. Many students were featured in the video and helped share it to build viewership.

## FACILITIES, INFRASTRUCTURE & PROGRAMMATIC

**King Arthur Flour to Expand Classes to WSU Bread Lab:** King Arthur Flour, America's oldest flour company, will expand its baking school this fall from New England to WSU's Bread Lab in the Skagit Valley. King Arthur Flour hosts more than **800 hands-on classes** every year. **See accompanying press release ([here](#)).**

**WSU Creamery Expansion:** **The current planned substantial completion date is November 18.** During September, the facility was toured by members of the SFS External Advisory Board and Dr. Eric Bastian, Vice President of Industry Relations with United Dairymen of Idaho, recently with Glanbia Nutritionals and Glanbia Foods. A tour of the Creamery facility with key stakeholders in the Washington dairy industry is scheduled for 12 November.

**House Capital Budget Committee Tours WSU Puyallup REC & Washington Stormwater Center:** The House Capital Budget Committee toured the WSU Puyallup Research and Extension Center and Washington Stormwater Center on 15 September. Committee members and staff engaged in a roundtable discussion with WSU faculty and staff and executives from Boeing, EPA, NOAA, and the City of Puyallup discussing "Working Together for a Cleaner Puget Sound."

**The GeoAnalytical Lab receives new X-ray Fluorescence (XRF) spectrometer:** The WSU GeoAnalytical Lab (SoE) has provided analyses of rocks and minerals to the geologic research community since 1978. The Lab was recently awarded funding from NSF to buy a new **X-ray Fluorescence (XRF) spectrometer**. The NSF review panel was particularly enthusiastic about the award, referring to the GeoAnalytical Lab as 'a valuable national resource', '**the foundational core of geochemical research in the United States**', and 'a national treasure' in their reviews of the proposal. The new machine was delivered on 29 September, and should be fully operational within the next couple of months. Learn more ([here](#)).

**WSU Wine Science Center Receives Commercial Winery License:** The WSU Wine Science Center is now a certified commercial winery, which permits the storage, sale and pouring or Blended Learning wines on premise. The V&E Program continues to work with WSU Construction, Lydig Construction (contractor) and WSU Tri-Cities to resolve issues at the Wine Science Center including: winery wastewater discharge, ventilation, air conditioning, and revisions to the electrical system. Planning for the new greenhouses that will be built adjacent to the WSC is ongoing. We anticipate that bids for the construction will be invited in October.