



## CAHNRS COMMUNICATIONS

In the month of November, CAHNRS Communications Office published **19** Online Articles that highlight accomplishments in Academic Programs, Research and Extension. A selection is given below:

### Top News Stories

- [New potatoes make great fries](#) by **Scott Weybright** | Published November 21 Appeared in the Bellingham Herald, Centralia Chronicle, Lewiston Tribune, Tacoma News Tribune, Ontario Argus Observer, Benchmark Monitor, Potato Business, others
- [Forest-powered biofuel flight heads to Washington, D.C.](#) By **WSU News staff** | Published November 14 Appeared in USA Today, Popular Science, Yahoo, Foreign Affairs, other outlets
- [Scientists gain upper hand on devastating wheat scab disease](#) By **Seth Truscott** | Published November 2 Appeared in Science Blog, BigAg, GooglePlus, PhysOrg, other outlets
- [\\$2 million grant funds continuing WSU research of organic quinoa](#) by **Scott Weybright** | Published Oct. 31 Appeared in Quinoa.org, Growing Washington, Organic Farming Research Foundation, Extension.org, others
- [Researcher fights fungus in apples, pears under storage](#) By **Seth Truscott** | Published November 7 Appeared in Growing Produce, Washington Ag Network, Oregon State Extension, Google Plus, Fresh Plaza

### Social Media

[Facebook](#)    21 posts    373 likes    25,841 reached    2,701 fans (up 0.7%)

Top Post: [Bears going into hibernation](#)

[Twitter](#)    104 tweets    74,212 impressions    2,247 engagements    4,086 followers (up .9%)

Top Tweet: [Coffee and Applewood smoked Cougar Gold](#)

## RESEARCH – FACULTY HIGHLIGHTS

- **Markus Flury** (CSS) was elected to the American Association for the Advancement of Science (AAAS) and honored for contributions to soil physics and hydrology of the vadose zone – the region between the soil surface and groundwater table. He does experimental work on preferential flow – when water flows more quickly through a small volume – and colloidal processes in soils. Colloids are small particles that can be suspended in water in soils for long periods and can contribute to contaminant transport ([here](#)).
- **Jim Harbertson** (VE) was honored as one of Wine Business Monthly’s 50 Top leaders. The magazine selected Dr. Harbertson, one of three wine scientists named, for “moving the ball on phenolic measurement with the Harbertson-Adams Assay.” He was featured in the December 2016 issue.
- **Sindhu Sankaran** (BSE) gave an invited address at the SciTech Northwest 2016 TechAlliance partnership event to 200+ attendees from WSU, UW, and PNNL “High-Throughput Sensing in Agriculture.” ([here](#)).
- **Lindsey du Toit** (PP) was invited by the American Seed Trade Association to speak at the ASTA Western Farm and Lawn Seed Conference in Kansas City, MO, “Brassica black leg – The hidden dangers of a seedborne pathogen.” The presentation was requested because of the increasing prevalence of black leg, caused by the fungus *Leptosphaeria maculans*, in canola crops in Midwestern states.

- **Markus Keller** (Hort.) gave an invited keynote presentation “Environmental drivers and spoilers of grape ripening” at the International InnoVine Symposium in Toulouse, France on Nov. 16-17.
- **Karkee, Manoj** (BSE) gave an invited address on “UAS for pest management” to the Mid Atlantic Crop Management School in Ocean City, MD on Nov. 15, 2016. Participants: ~250
- **Dennis Johnson** (PP) delivered a ‘Focus on Potatoes’ Webinar: “Epidemiology and Management of Potato White Mold,” which will be available until Feb. 28, 2017.
- On Nov. 17, the Surgeon General issued a [landmark report](#) on alcohol, drugs and health. The report has a heavy emphasis on prevention and cites three articles that were published by **Brittany Cooper** (HD), who is a faculty member in the interdisciplinary doctorate in Prevention Science program.
- **Naidu Rayapati** (PP) gave an invited talk “An overview of virus diseases in Washington vineyards” at the Washington State Grape Society annual meeting, Nov. 10-11, 2016, Grandview, WA.
- **Doug Walsh** (Ent.) was highlighted on NBC Right Now ([here](#)) and WSU News ([here](#)) for his work to support the hops industry and the emerging craft brew market.

## RESEARCH – GRANT FUNDING

*In the month of November, CAHNRS faculty received **\$2M<sup>+</sup>** 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:*

- **Lee Kalcsits** and **Stefano Musacchi** (Hort.) were awarded a \$1M **USDA-SCRI** (lead institution Cornell) for accelerating the development, evaluation, and adoption of new apple rootstock technologies to improve apple grower profitability and sustainability.
- **John Stark** (Ent.) and **Tanyalee Erwin** (CEREO) were awarded a \$765K grant from the **Washington Dept of Ecology/EPA** to support the Interagency Stormwater Strategic Initiative Team.
- **Dave Crowder** (Ent.) and **Aaron Esser** (Lincoln Co. Ext.) were awarded a \$325K grant from the **USDA Crop Protection and Pest Management** program to improve Integrated Pest Management of wireworms in cereal crops.

## RESEARCH – PUBLICATIONS

*CAHNRS faculty published a total of **50** articles in peer-reviewed journals and conference proceeding, which are cataloged online in our Weekly Published Research Archive ([available here](#)). A selection of these publications, which appeared in journals that rank in at least the 90<sup>th</sup> percentile in their respective fields, is provided below with their 5-year impact factor.*

### Discovery

- “Identifying hotspots in the carbon footprint of a small scale organic vegetable farm” AGRICULTURAL SYSTEMS – Impact Factor 3.4 – 97<sup>th</sup> Percentile in [Multidisciplinary Agriculture](#), **David Granatstein** (CSS), **Claudio Stockle** (BSE), **Lynne Carpenter-Boggs** (CSS)
- “Improving the deconvolution and interpretation of XPS spectra from chars by ab initio calculations” CARBON – Impact Factor 6.8 – 90<sup>th</sup> Percentile in [Materials Science](#), **Manuel Garcia-Perez** (BSE)
- “Plastidic phosphoglucomutase and ADP-glucose pyrophosphorylase mutants impair starch synthesis in rice pollen grains and cause male sterility” JOURNAL OF EXPERIMENTAL BOTANY – Impact Factor 6.2 – 94<sup>th</sup> Percentile in [Plant Science](#), **Thomas Okita** (IBC)
- “Limitations to photosynthesis by proton motive force-induced photosystem II photodamage” ELIFE – Impact Factor 8.5 – 95<sup>th</sup> Percentile in [Biology](#), **Amit Dhingra** (Hort.)

- “Nuclear Localised MORE SULPHUR ACCUMULATION1 Epigenetically Regulates Sulphur Homeostasis in Arabidopsis thaliana” PLOS GENETICS – Impact Factor 7.5 – 91<sup>st</sup> Percentile in Genetics and Heredity, **Sanja Roje** (IBC)
- “Cooperative functioning between phenylalanine ammonia lyase and isochorismate synthase activities contributes to salicylic acid biosynthesis in soybean” NEW PHYTOLOGIST – Impact Factor 7.5 – 97<sup>th</sup> Percentile in Plant Sciences, **Roy Navarre** (PP)
- “Resveratrol supplementation to high fat diet-fed pregnant mice promotes brown and beige adipocyte development and prevents obesity in male offspring” JOURNAL OF PHYSIOLOGY – Impact Factor 4.9 – 92<sup>nd</sup> Percentile in Physiology, **Mei-Jun Zhu** (SFS) and **Min Du** (AS)
- “Protection of the photosynthetic apparatus against dehydration stress in the resurrection plant Craterostigma pumilum” PLANT JOURNAL – Impact Factor 6.5 – 94<sup>th</sup> Percentile in Plant Sciences, **Helmut Kirkoff** (IBC)
- “Resveratrol enhances brown adipocyte formation and function by activating AMP-activated protein kinase (AMPK) α1 in mice fed high-fat diet” MOLECULAR NUTRITION AND FOOD RESEARCH – Impact Factor 4.7 – 96<sup>th</sup> Percentile in Food, Science & Technology, **Mei-Jun Zhu** (SFS), **Dan Rodgers** (AS), and **Min Du** (AS)

#### Translational

---

- “Transcriptome Sequencing Identified Genes and Gene Ontologies Associated with Early Freezing Tolerance in Maize” FRONTIERS IN PLANT SCIENCE – Impact Factor 4.5 – 93<sup>rd</sup> Percentile in Plant Sciences, **Zhiwu Zhang** (CSS)
- “Thermal behavior and kinetic study for catalytic co-pyrolysis of biomass with plastics” BIORESOURCE TECHNOLOGY – Impact Factor 5.7 – 96<sup>th</sup> Percentile in Agricultural Engineering, **Hanwu Lei**, **Joan Wu**, and **Shulin Chen** (BSE)
- “Intensified nitrogen removal in immobilized nitrifier enhanced constructed wetlands with external carbon addition” BIORESOURCE TECHNOLOGY – Impact Factor 5.7 – 96<sup>th</sup> Percentile in Agricultural Engineering, **Jeffrey Ullman** (BSE)
- “An integrated approach to maintaining cereal productivity under climate change” GLOBAL FOOD SECURITY-AGRICULTURE POLICY ECONOMICS AND ENVIRONMENT – Impact Factor 3.6 – 92<sup>nd</sup> Percentile in Global Food Security, **Kulvinder Gill** (CSS)
- “Optimal Opt-In Residential Time-of-Use Contract Based on Principal-Agent Theory “ IEEE TRANSACTIONS ON POWER SYSTEMS – Impact Factor 5.9 – 99<sup>th</sup> Percentile in Electrical and Electronic Engineering, **Alan Love** (SES)

#### Invited Reviews/Books/Articles

---

- “Generation and Functional Evaluation of Designer Monoterpene Synthases” SYNTHETIC BIOLOGY AND METABOLIC ENGINEERING IN PLANTS AND MICROBES, Book Chapter, **Markus Lange** (IBC)
- **Jolie Kaytes** (SDC) published three poems (*Panorama*, *Zone of Influence*, *Stranger*), THE FOURTH RIVER (Issue 0.3)

### RESEARCH & EXTENSION – EVENTS

Building Soils for Better Crops Workshop held on Nov. 29, 2016 in Moses Lake, WA. **David Granatstein** (CSS) and **Andy McGuire** (Grant Co. Ext.) co-hosted the event, attracting over 110 people. Multiple

topics were discussed, including soil improvement on irrigated land in the state via precise nutrient application and incorporation of novel soil amendments.

36<sup>th</sup> Annual Food Safety and Sanitation Workshop held on Nov. 8-9, 2016 in Portland, OR. The Northwest Food Safety & Sanitation Workshop addresses basic sanitation as well as cutting edge issues related to food sanitation and food safety. Attendance this year maxed out prior to the event at over 425 participants. **Girish Ganjyal** (SFS), the WSU extension team, and the regional industry advisory board contributed to organizing this event.

WSU Wine Science Center hosts the Ravenholt Lecture Series on Nov. 9, 2016. Dr. Terry Bates, a senior research associate in extension at Cornell University, spoke to 40 industry members, researchers, and students about his on-going project to develop precision mapping technology that can be used to identify variations in vineyards and develop managing plans that take these differences into account. The event was made possible by an endowment from the Albert Ravenholt Foundation, which supports wine and grape education for the betterment of the regional grape and wine industry.

Extrusion Processing Short Course offered in Pullman, WA from Nov. 30 - Dec. 1, 2016. Attendance for this introductory course filled quickly. It provided information about *Extrusion*, a technology that is widely used in the food industry to make snacks, breakfast cereals, flat breads, bread crumbs, pellet products, textured vegetable proteins and many others. This workshop focused on Pulse Ingredient Extrusion and was underwritten by the USA Dry Pea and Lentil Council.

## EXTENSION - HIGHLIGHTS

- **Ute Chambers**, Manager of the WSU Decision Aid System, delivered an invited lecture about web-based extension as well as job opportunities in academia and the ag industry to students in the Hispanic Orchard Workers Program at Wenatchee Valley College.
- **Drew L. Betz**, Professor in the Extension Youth and Family Unit and Whatcom County Extension Director, was elected to the [national advisory board for Certified Family Life Educators \(CFLE\)](#), a program of the National Council on Family Relations. The nine-member board's mission is to provide leadership for the ongoing development of the CFLE program as a method to advance and promote family life education as an important and emerging profession.
- **Spokane County Master Gardeners were Honored with International Search for Excellence Award.** WSU's Master Gardener Program was selected as the first-place winner in an international search for excellence, in the category of 'youth' projects. Fifty-five projects were submitted for consideration from across the United States and Canada. WSU was recognized for creating a 'Garden Lesson in a Box', which introduces children to the joys of gardening, via fun and hands-on activities. The Master Gardeners volunteers partner with the Spokane Public Schools District, to teach children in Kindergarten through 6<sup>th</sup> grade, during the 'Express' after-school child care program. Over an 11-year period, [the volunteers have reached over 10,000 children.](#) The group will be honored at the [2017 International Master Gardener Conference](#), on July 10-14, 2017 in Portland, Oregon. Source: Susan Malm, Master Gardener Volunteer, [jimmalm31@msn.com](mailto:jimmalm31@msn.com) and Tim Kohlhauff, WSU Extension Master Gardener Coordinator, [tkolhauff@spokanecounty.org](mailto:tkolhauff@spokanecounty.org)
- **Brad Gaolach** (Director, WSU Metropolitan Center for Applied Research and Extension) gave a keynote presentation "The Western Metro Center: A Model for Multi-Institutional Investment in Metropolitan Extension" at the [2016 Northeast Regional Urban Extension Conference](#) in Newark, NJ.
- The WSU Metro Center hosted the [Urban Food-Energy-Water Summit: Promoting urban food, energy and water resource resilience via the regional food system](#) in collaboration with faculty and graduate students from WSU's CSANR, SES, SOE, CEREO, WRC, and CE.

## Presentations

---

- AnaMaria Diaz Martinez and Yadira Olivera. (2016) *Strengthening Families Program for Parents and Youth 10-14: Impact of Evidence-Based Programming Focused on Prevention and Building Family Strengths*. 2016 WA State Prevention Summit sponsored by DOH, November 7-8, in Yakima, WA.

## Grant Funding

---

- SNAP Ed FFY17-Region 1, Spokane County. WA DOH (SNAP-Ed) WA DSHS. \$781,232. Pls **Doreen Hauser-Lindstrom, Bridget Rohner, Margaret Viebrock**.
- **The Metro Center**, in collaboration with faculty from the WSU's **Division of Governmental Studies & Services; School of Economic Sciences; and School of Hospitality Business Management** secured a \$240,000, four-year contract with the Washington Restaurant Association. This study will track a set of industry indicators and variables over time including: industry benchmarks beginning in 2010 and menu pricing data and overall labor cost changes for the industry through the end of decade.

## STUDENT NEWS

- On Nov. 29, **Kate Evans** (Assoc. Professor, Hort.) taught 16 students from Wenatchee Valley College about fruit evaluation techniques and participated in sensory evaluation of experimental selections in the apple breeding program. At least 12 of the students will be transferring to WSU in 2017.
- Three Crop and Soil Sciences graduate students recently received awards at the November 2016 international meetings of the American Society of Agronomy, Crop Science Society of America and Soil Science Society of America: **Xiaochi Ma** – Third Place in Crop Irrigation Strategies and Management Community; **Megan Lewien** – 1<sup>st</sup> Place in the Crop Breeding and Genetics Division; **Henry Sintim** – 1<sup>st</sup> Place in the Oral and Poster Competition of the Soil Physics and Hydrology Division.
- **Patrick Freeze** (CSS) was honored as a WSU Distinguished Scholar at the third annual Distinguished Scholars Celebration on October 5.
- Students in Construction Management (**Marie Landsverk, Steven Bradshaw, and Sam Rykken**), Interior Design (**Christina Andresen**), and Architecture (**Connor Schneider**) placed second out of 31 teams from 23 universities in the 2016 Design-Build Conference & Expo in Las Vegas, Nevada on Nov. 2-4, 2016. The event was judged by an industry panel including architects, engineers, contractors, and owners. Their advisor was **David Gunderson** (Construction Management) ([here](#)).
- Congratulations to **Rattanak Leng**, the Winner of the 2016 WilsonArt Academic Award for the International Interior Design Association (IIDA) Portfolio competition in the Senior category. Rattanak's faculty sponsor was **Kathleen Ryan** ([here](#)).
- Eighteen (18) second year Landscape Architecture students, led by faculty member **Steve Austin**, presented ideas for an emerging Coeur d'Alene Tribe Tribute Park. The class is working for the Tribe to develop plans for a sculpture park to honor Chief Morris Antelope as well as the Tribe's history and future. During this service-learning studio, the students are also working closely with the city of Coeur d'Alene and North Idaho College, as the site will be a city park and will have a strong connection to the College's campus ([here](#)).
- Congratulations to **Kristen Sparkman, Hatouf Alnoumani, and Garrett Lattanzio**, who were accepted to begin their graduate programs in Spring 2017 in the School of Food Science.

- **Suraj Amatya** received a prestigious Giuseppe Pellizzi Prize 2016. This prize is given to three winners from an international competition on “International Best PhD on Agricultural Mechanization,” organized and sponsored by the Club of Bologna and the Accademia dei Georgofili and sponsored by FederUnacoma every other year. Dr. Amatya completed his PhD studies in Biological Systems Engineering under the supervision of **Manoj Karkee** in 2015.

## FACILITIES, INFRASTRUCTURE & PROGRAMMATIC

Commercial Winery License. The WSU Wine Science Center is now certified commercial winery, which enables us to make and sell commercial wines. We are working closely with WSU Tri-Cities, Washington State Liquor and Cannabis enforcement officers and the WSU Attorney General’s Office to navigate the state liquor policies to ensure we are compliant and have the necessary permits that allow us to sell and serve wines that are made off premise. WSU Attorney General, Sherry Gordon visited the WSC in early November to tour the facility and meet with the licensing team (VE and WSU TC leadership) to get a better understanding of our needs and the barriers to obtaining the necessary event permits. The VE Program is working with CAHNRS and WSU finance and legal offices to set up an enterprise account that will allow us to sell our Blended Learning wines in order to support the operations of the VE Program.

M.T. James Museum Butterfly Collection. **Rich Zack** (Ent.) was featured in a front-page article in the October 30, 2016 edition of the Spokesman Review Newspaper. The article tells of the gift of a large privately held butterfly collection from the Jim Nebel estate to the M.T. James Museum. The James Collection houses over 1.25 million specimens and is consistently ranked as one of the top 15 university collections in the United States

Notes on the Creamery Expansion. Jay Gordon and others from the Washington Dairy Federation visited the Creamery expansion site on November 12 as part of a tour of the dairy farm and other campus facilities. Construction continues to progress. The walls are up, the asphalt is laid (just in time before the cold weather), the roof is on, and doors and windows are starting to be added. With the holidays, **John Haugen** projects that it will be into January before they reach substantial completion. Some change orders are needed to clarify plans and required redesign work is being conducted on the fly to make the plumbing work including a diversion over the Wheat Quality Lab.