



CAHNRS COMMUNICATIONS

In the month of August, CAHNRS Communications Office published **13** Online Articles that highlight accomplishments in Academic Programs, Research and Extension. A selection is given below.

Top News Stories

- [Study: Neonicotinoid pesticides pose low risk to honey bees](#): By **Maegan Murray** with, WSU Tri-Cities; CAHNRS team edited – Published August 15. Appeared in the Oregonian, Yakima Herald, Capital Press, Good Fruit Grower, others
- [Scientist develops gene therapy for muscle wasting](#): By **Seth Truscott** – Published July 26. Appeared in R&D Magazine, Science Daily, UPI.com, Google alerts, other outlets
- [A win-win for farmers and slowing climate change](#): By **Scott Weybright** – published August 15. Appeared in AgPro, Moscow-Pullman Daily News, Farms, Sunnyside Daily News
- [Saving salmon in the wild – is chum the king?](#) By **Linda Weiford**, WSU News – published August 16. Appeared in the Columbian, Daily Journal of Commerce, Spokesman Review, others

Social Media

Facebook 28 posts 596 likes 38,175 reached 2,545 fans (+2.1%)

*Top Post: [Ferdinand's wins ice cream award](#)

Twitter 82 tweets 45,960 impressions 1,584 engagements 3,961 followers (+1.2%)

*Top Tweet: [Link to Pres Schulz story in Daily Evergreen](#): 8/12

RESEARCH – FACULTY HIGHLIGHTS

- **Manoj Karkee** (BSystemE) delivered an invited **IEEE Distinguished Lecture** at Amrita University, Kerala, India on August 7, 2016. “Automated Fresh Market Tree Fruit Harvesting: Where do We Stand.”
- **Benjamin Cowan** (SES) was selected as a **Faculty Research fellow in the Health Economics Program at the National Bureau of Economic Research (NBER)**. Twenty-five Nobel Prize winners in Economics and thirteen past chairs of the President's Council of Economic Advisers have held NBER affiliations. Dr. Cowan is the **first economist at WSU** to earn an appointment at NBER.
- **John Reganold** (CSS) had an invited op-ed in *The Guardian* on 14 August discussing how organic farming is a relatively untapped resource for helping to sustainably feed the world ([here](#)).
- **Tim Murray** (PP) was elected President of the **American Phytopathological Society**, at the annual meeting last month. The society has over 5,000 members worldwide.
- **Laura Hill** (HD) was elected to the board of directors of the **Society for Prevention Research**
- **Erica Weintraub Austin, Diane Smith, Alexandra Bush-Kaufman, Jane Lanigan, Catalina Aragon, Jen Hey** and **Diane Smith** each presented at the Society for Nutrition Education and Behavior, San Diego, CA, July 30 – August 2nd, 2016
- **Mark Lange** (IBC) was elected **President of the Phytochemical Society of North America** at the annual meeting of the society on August 7-10, 2016 in Davis, CA.
- **Norman Lewis** (IBC) received the **Phytochemical Pioneer Award** from the Phytochemical Society of North America

RESEARCH – GRANT FUNDING

*In the month of August, CAHNRS faculty received **\$4M*** 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:*

- **Min Du** (AS) was awarded a **\$400K** R21 from the **NIH-National Institute on Aging (NIA)** to characterize the underlying mechanisms of adipose senescence during aging, which is a major cause of metabolic dysfunction and inflammation.
- **Jim Pru** (AS) was awarded a **\$400K** R21 from the **NIH-National Institute of Child Health and Human Development (NICHD)**. The project will work to achieve a fundamental understanding of estradiol signaling, which will lead the way for developing strategies to combat hyper-proliferative diseases of the endometrium, such as endometriosis and endometrial cancer.
- **Naidu Rayapati** (Plant Pathology) secured **\$1.2M** from USDA-APHIS to continue funding for the **Clean Plant Network (CPN)**, which serves as a materials source and pathogen testing facility for nurseries, growers, state certification programs, and researchers. USAID-sponsored apple and pear growers from Lebanon visited the CPN on August 22, 2016 to learn about production of pathogen-tested fruit trees.
- **Helmut Kirchhoff (IBC)** was awarded a **\$700K** grant from the **NSF-MCB** program for understanding photosynthetic energy conversion on the mesoscale.
- **Betsy Beers** and **Dave Crowder** (Entomology) received an **\$800K** USDA-SCRI grant for management of brown marmorated stink bugs in US specialty crops.
- **Claudio Stöckle** (BSysE), **Jonathon Yoder** (SES), **Randy Fortenbery** (SES) and **Chad Kruger** (CSANR) secured a \$600K share of an **NSF INFEWS** (Columbia FEW) award (total \$2.3M led by WSU VCEA).
- CAHNRS faculty were awarded **6** training grants (5 pre-doctoral and 1 post-doctoral) from the USDA Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative (**USDA-ELI**). These awards are funded on a **competitive basis** and will provide a combined **\$650K** in support over a two-year period. Awards were made to trainees of **John Reganold** (CSS), **Bill Snyder** (Entomology), **Michael Pumphrey** (CSS), **David Crowder** (Entomology), and **Scot Hulbert** (PP).

RESEARCH – PUBLICATIONS

*CAHNRS faculty published a total of **23** 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 is provided below with hyperlinks.*

Impactful in Their Fields

- “*Smad7* gene delivery prevents muscle wasting associated with cancer cachexia in mice” SCIENCE TRANSLATIONAL MEDICINE – Impact Factor 15.8 – **Dan Rodgers** (AS) ([here](#)), **see accompanying CAHNRS press release** ([here](#)), 98th percentile in Research & Experimental Medicine
- “Joint-linkage mapping and GWAS reveal extensive genetic loci that regulate male inflorescence size in maize” PLANT BIOTECHNOLOGY JOURNAL – Impact Factor 5.8 – **Zhiwu Zhang** (CSS) ([here](#)), 95th percentile in Plant Sciences

Discovery

- “Accurate Profiling of Gene Expression and Alternative Polyadenylation with Whole Transcriptome Termini Site Sequencing (WTTS-Seq)” GENETICS – Impact Factor 5.9 – **Zhihua Jiang** (AS) ([here](#))
- “Surface-enhanced Raman spectroscopy coupled with gold nanoparticles for rapid detection of

phosmet and thiabendazole residues in apples” FOOD CONTROL – Impact Factor 3.5 – **Barbara Rasco** (SFS) ([here](#))

- “Ecological Trade-offs between Migration and Reproduction Are Mediated by the Nutrition-Sensitive Insulin-Signaling Pathway” INTERNATIONAL JOURNAL OF BIOLOGICAL SCIENCES – Impact Factor 3.9 – **Laura Lavine** (Entomology) ([here](#))
- “Inhibitory effects of grape seed extract on growth, quorum sensing, and virulence factors of CDC “top-six” non-O157 Shiga toxin producing E. coli” INTERNATIONAL JOURNAL OF FOOD MICROBIOLOGY – Impact Factor 4.2 – **Meijun Zhu** (AS) ([here](#))
- “Directed evolution increases desaturation of a cyanobacterial fatty acid desaturase in eukaryotic expression systems” BIOTECHNOLOGY AND BIOENGINEERING – Impact Factor 4.2 – **John Browne** (IBC) ([here](#))

Translational and Collaborative

- “Enhancement of jet fuel range alkanes from co-feeding of lignocellulosic biomass with plastics via tandem catalytic conversions” APPLIED ENERGY – Impact Factor 6.2 – **Shulin Chen** (BSysE) ([here](#))
- “Children’s perceptions of emotion regulation strategy effectiveness: links with attachment security” ATTACHMENT & HUMAN DEVELOPMENT – Impact Factor 2.5 – **Sara Waters** (HD) ([here](#))
- “GAPIT Version 2: An Enhanced Integrated Tool for Genomic Association and Prediction” PLANT GENOME – Impact Factor 4.98 – **Zhiwu Zhang** (CSS) ([here](#))

Invited Reviews/Books/Articles

- “Modeling Soil Processes: Review, Key Challenges, and New Perspectives” VADOSE ZONE JOURNAL – Impact Factor 2.2 – **Markus Flury** (CSS) ([here](#))
- “Strategy and Game Theory: Practice Exercises with Answers” Springer-Verlag Publishing – **Felix Munoz** (SES) and **Daniel Toro-Gonzalez** (WSU PhD ‘12) ([here](#))
- “Rebuilding Africa’s Soil, 1 Farm at a Time” SCIENTIFIC AMERICAN – **John Reganold** and **Jerry Glover** (CSS) ([here](#))

RESEARCH & EXTENSION – EVENTS

WSU Mt. Vernon Northwestern Washington REC Hosts the Grain Gathering on July 28-30, 2016.

The Bread Lab at the Mt. Vernon REC hosted its annual three-day Grain Gathering with the support of corporate sponsors such as Whole Foods, Patagonia, the Clif Bar Family Foundation and others. The event was **sold-out with 250 attendees from 25 states and nine countries**, including **congresswoman Suzan Delbene**, Ardent (the largest flour miller in the US) and ARYZTA (the second-largest-baking group in the world). Contact: **Chad Kruger** (CSNAR) and **Stephen Jones** (CSS).

WSU Hosts Organic Farm Field Day on July 28, 2016 at Eggert Family Farm in Pullman, WA.

WSU is a leader in organic agricultural research and **one of the few institutions in the country that offers an undergraduate degree program in this booming sector**. The Eggert Farm, is a **critical resource to develop cutting edge technologies and innovation**. The Farm hosted its second annual field day in July, where undergraduate researchers, graduate students and postdoctoral fellows gave presentations on organic herbicide effectiveness, cover crop variety trials and natural pest prevention through soil health, among other important topics. Contact: **Brad Jaeckel** (CSS)

WSU Viticulture Extension and the Washington State Grape Society co-hosted the annual Washington Viticulture Field Day on August 12th.

WSU researchers, industry leaders and growers toured area vineyards to learn about new research, techniques and tools to improve vineyard management. Vineyard managers, researchers and experts shared information about pruning, canopy management, field grafting and even provided a live drone demonstration. The event was an overwhelming success, drawing the largest crowd seen in recent years. (Contact: **Thomas Henick-Kling**, VE)

International Federation of Automatic Controls (IFAC) AgriControl 2016 Conference in Seattle from August 14-18.

The Center for Precision and Automated Agricultural Systems (CPAAS – Prosser, WA) hosted this international conference with a total of **138 participants** from **24 countries**. **Manoj Karkee** served as the National Organization Chair and **Qin Zhang** as the International Program Chair for the conference.

Legislative/Congressional Visit to IAREC and Wine Science Center August 17.

The WSU Office of Government Relations/External Affairs led ~60 legislative/congressional staff on a tour of the Wine Science Center and IAREC on August 17th. Short presentations were given as well as a facilities tour. Great interest was shown by the Washington wine industry.

EXTENSION - HIGHLIGHTS

- The **WSU-Decision Aid System (WSU-DAS) for Tree Fruits** team, led by **Vince Jones** (TFREC, Entomology), received a **\$250K** contract from the British Columbia Tree Fruit Growers and the Okanagan-Kootenay Sterile Insect Release program to adapt the decision support system to British Columbia fruit growing regions. This award will increase collaboration between Canadian and WSU scientists to improve both versions of the system. Currently WSU-DAS is used by decision makers on >90% of the tree fruit acreage in Washington state with an estimated economic value of ~\$16M/yr.
- Overhead netting can protect high value fruit crops from heat and light stress as well as destructive weather events like hail, but Washington producers lack reliable information on its efficacy and value under their growing conditions. **Lee Kalcsits** and **Stefano Musacchi** (TFREC) updated **90 field day participants** August 17 on their research, which suggests different colors of photo-selective anti-hail nets can have horticulturally and economically significant impacts on tree growth and fruit quality.
- Several CAHNRS faculty were honored at the annual conference for the National Association of County Agricultural Agents in Little Rock, Arkansas: Achievement Award, National Winner **Nicole Martini**; Distinguished Service Award, National Winner **Stephen M. Van Vleet**; Bound Book, National Winner **Linda Chalker-Scott**; Fact Sheet, National Finalist **Susan Kerr**; Learning Module, Regional Winner **Susan Kerr**; Newsletter, Team Regional Winner **Susan Kerr**; Publication, Regional Winner **W.F. "Frank" Hendrix**; Video Presentation, Regional Winner **Trevor C Lane**; Web Site, Regional Winner **Linda Chalker-Scott**; Agriculture Awareness and Appreciation Award, National Finalist **Susan Kerr**; Excellence in 4-H Programming, Regional Winner **Brian Brandt**; Search for Excellence in Farm Health and Safety, National Finalist **Don W McMoran**; National Winner for the Research Poster Category, 2nd Place **Steve Norberg**, **Don Llewellyn**, **Steve Fransen** and **Shannon Neibergs**.

STUDENT NEWS

- **Cedric Habiyaremye** (CSS) will begin a 3-month fellowship to conduct breeding, agronomic and ethnographic work on quinoa and millet in Rwanda. He received the Norman E. Borlaug Leadership Enhancement in Agriculture Program (Borlaug LEAP) to fund this effort. (Mentor: **Kevin Murphy**)
- **Alex Whitener** (Entomology) received the Phil Jenkins Scholarship for \$2000 by the Yakima Pomological Society, and Proven Winners Horticulture Scholarship for \$5000. (Mentor: **Elizabeth Beers**)
- Congratulations to **Zachary Cartwright, Jesse Alpin, Megan Wade** and **Megan Shumaker**, all of whom received scholarships from the Washington Wine Industry.
- **School of Food Science students took second place** in the Idaho Milk Products Association (IMPA) product development competitions up against teams from BYU, Utah State U, and Cornell. The students enjoyed meeting with industry professionals, which provided them with networking opportunities.
- **Over 150 people attended the Welcome BBQ** on Aug 26th at Kruegel Park sponsored by the School of Food Science, the Department of Entomology, and Ferdinand's. A pig and lamb were roasted by our very own **Ariane Kreger**, an undergraduate researcher in the lab of **Girish Ganjyal**.
- **Raise a Glass, Fund a Scholarship** is an annual fundraiser sponsored by Ste. Michelle Wine Estates and Columbia Distributors. On August 12th, **60** sales professionals in the wine industry attended and were given information will help their efforts to attract participating restaurants. Proceeds from the sale will benefit VE Program scholarships. Last year we received \$40,000 from this project for our students. (Contact: **Thomas Henick-Kling** and **Tom Collins**, VE)
- Horticulture graduate students **Whitney Garton** (first place) and **Sahar Dabirian** (third place) won awards for their poster presentations at the national meeting of the **American Society for Horticultural Science** in Atlanta, Georgia (mentor **Carol Miles**). In addition, **Chandler Dolezal** and **Kathryn Bolding** tied for 3rd place in a nationwide paper-presentation graduate student competition during the **2016 Annual Potato Association of America** meetings in Grand Rapids, Michigan (Mentor: **Mark Pavek**).

FACILITIES, INFRASTRUCTURE & PROGRAMMATIC

Expansion of WSU Creamery: The hollow core floor panels are being installed and the retaining wall is being poured. Once the panels for the 2nd floor are installed, masonry walls and roof trusses on can be installed. Safety is discussed at each weekly meeting, specifically on how to ensure that subcontractors comply with WSU requirements. **The current planned substantial completion date is November 18.** Ferdinand's now employs 30 students in production and 15 students in the shop. Efforts are ongoing to maintain PCI compliance for software and equipment by early October.

Commercial Winery License: A successful state inspection for obtaining a commercial winery license was completed on August 15th. Our application is gradually progressing through the Federal process. We eagerly await this certification, which will allow us to sell our excess research wine as bulk wine and also sell our Blended Learning wines in the WSC.

Auction of Washington Wines: The Auction of Washington Wines was a huge success! **The auction raised over \$3 million to support Children's Hospital and the WSU VE Program.** We await final figures for the WSU contribution. Beyond the financial benefit to the VE Program, Auction of Washington Wines events provided a great opportunity to network and build relationships with wine enthusiasts, alumni and industry members.

The **Interior Design program** (SDC) received six-year program accreditation ([here](#)) and the **Architecture** program finalized an articulation agreement with Lake Washington Institute of Technology ([here](#)). (Contact: **Phil Gruen**, SDC)