**Communications**

In February and March 2017, CAHNRS Communications Office published 10 Online Articles that highlight accomplishments in Academic Programs, Research and Extension. A selection is given below:

**TOP NEWS STORIES**

- “WSU wins grant for textile manufacturing innovation” - WalMart/Scott Weybright release | Published Jan. 30, 2017
  Appeared in TextileWorld, Efficient Gov.com, Just Style, Environmental Leader, other outlets
- “Scientists discover perennial hybrid of wheat, wheatgrass” – By Seth Truscott | Published Jan. 12, 2017
  Appeared in KUOW, Oregon Public Broadcasting, Capital Press, Twin Falls News, Feed Navigator, other outlets
- “WSU receives $278,000 for viticulture and enology research” – By Kaury Balcom | Published Jan. 31, 2017
  Appeared in Tri-City Herald, Washington Ag Network, Walla Walla Union-Bulletin

**SOCIAL MEDIA**

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<tr>
<th>Platform</th>
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<th>Likes</th>
<th>Reached</th>
<th>Fans (+%)</th>
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<tr>
<td>Facebook</td>
<td>72</td>
<td>1,700</td>
<td>87,135</td>
<td>2,847 (+4.1%)</td>
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<td>Top Post:</td>
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<td>“Brandon Knodel/Butch Profile Post”</td>
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<tr>
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<td>404</td>
<td>254,300</td>
<td>6,193</td>
<td>4,255 (+3.8%)</td>
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**Faculty Highlights**

- **Bill Pan** (CSS) was named President-Elect of the international Soil Science Society of America.
- **Gustavo Barbosa-Canovas** (BSE) was selected to receive the 2017 Institute of Food Technologists (IFT) Research and Development Award. This organization of 15,000 members is the most relevant American society in the area of food science and technology. Dr. Barbosa-Canovas is an IFT Fellow and this is the third IFT award he has received – the others include the IFT Nicholas Appert Award (the world’s most prestigious award in food science and technology), and the IFT International Award.
- **Ting Chi** (AMDT) received the ITAA Mid-Career Excellence Award from the International Textile and Apparel Association (ITAA), this is one of the most prestigious awards given by the industry.
- **Jill McCluskey** (SES) gave an invited address “Understanding Consumer Preferences to Enhance Well-being and Food Security” at the National Press Club on April 6. The conference was sponsored by the Council on Food, Agricultural and Resource Economics in partnership with the Agricultural and Applied Economics Association.
- **Lynne Carpenter-Boggs** (CSS) received a Fulbright U.S. Scholar Program award for Sustainable Biological and Foliar Fertilization on Crops in Eastern African Phosphorus-Retaining Soils.
- **Naidu Rayapati** (PP) gave an invited presentation “An overview of virus diseases in vegetable crops in developing countries” at the Southern Horticultural Research Institute, Vietnam.
- **Tim Murray** (PP) delivered the plenary lecture at the American Phytopathological Society, Potomac Division meeting entitled “Resistance to Eyespot Disease of Wheat and its Wild Relatives” on March 23 in Morgantown, WV.
- **Amit Dhingra** (Hort.) was awarded US Patent 9,591,847: Control of ripening and senescence in pre-harvest and post-harvest plants and plant materials by manipulating alternative oxidase activity.
- **Qin Zhang** (BSE) and **Manoj Karkee** (BSE) were awarded US Patent 9,554,512: Robotic systems, methods, and end-effectors for harvesting produce.
- **Sindhuja Sankaran** (BSE) and **Lav Khot** (BSE) were featured in NATURE NEWS “Plant biologists welcome their robot overlords.”
- **Amy Salazar** (HD) was invited to testify before the US Congress on her work on “aging out” of foster care.
• **Wendy Sue Wheeler** (Ent.) was elected 2017 Vice President/President Elect of The Pesticide Stewardship Alliance.
• **Doug Walsh** (Ent.) was named a recipient of the Sahlin Faculty Excellence for Outreach and Engagement Award.
• **Manoj Karkee** (BSE) was featured in the article “Automation in Agriculture,” USA Today here, and nominated for 2017 New Holland Young Researcher Award, American Society of Agricultural and Biological Engineers.
• **Kathleen Ryan** and **Robert Krikac** (SDC) earned the Outstanding Paper of the Year award from the Council of Educators in Landscape Architecture, “Rural Interdisciplinary Service-Learning Projects: Frameworks for Engagement within Regional Rural Development Centers.”

**Grant Funding**
CAHNRS faculty received $3.7M* 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:

- **Andrei Smertenko** (IBC) was awarded a $410K AFRI grant from USDA-NIFA to study cellular mechanisms of self-protection against drought-inflicted damages in wheat.
- **Michael Kahn** (IBC) was awarded a $425K IOS grant from NSF for characterizing a novel sinorhizobium activity that increases legume nodulation.
- **Stephen Ficklin** (Hort.) was awarded a $895K grant (lead Clemson) from NSF to study national cyberinfrastructure for scientific data analysis at scale.
- **Helmut Kirchhoff** (IBC) was awarded a $400K NNSA grant from the DOE for understanding architectural dynamics in plant photosynthetic membranes.
- **Norman Lewis** (IBC) was awarded a $570K PGR grant from the NSF to decipher the molecular basis of elite red alder lines and their Frankia alni symbionts.
- **Carol Miles** (Hort.) was awarded a $443K SCRI grant (NC State Lead) from USDA for grafting to enhance resiliency in the U.S. vegetable industries.

**Publications**
CAHNRS faculty published 114 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.

**DISCOVERY**

- **Kevin Murphy** (CSS), “The genome of Chenopodium quinoa,” *Nature* – Impact Factor 41.5 – 99th percentile in Multidisciplinary Sciences
- **Jim Pru** (AS), “Forhead box a2 (FOXA2) is essential for uterine function and fertility,” *PNAS U.S.A.* – Impact Factor 10.2 – 94th percentile in Multidisciplinary Sciences
- **Diter von Wettstein** and **Sachin Rustgi** (CSS), “Serpin1 and WSCP differentially regulate the activity of the cysteine protease RD21 during plant development in Arabidopsis thaliana,” *PNAS U.S.A.* – Impact Factor 10.2 – 94th percentile in Multidisciplinary Sciences
- **Markus Lange** (IBC), “Draft Genome Sequence of Mentha longifolia and Development of Resources for Mint Cultivar Improvement” *Molecular Plant* – Impact Factor 7.1 – 97th percentile in Plant Sciences, *Dr. Lange’s work was selected as the cover story for the February 2017 issue.*
- **Andrei Smertenko** (IBC), “Impact of salt stress, cell death, and autophagy on peroxisomes: quantitative and morphological analyses using small fluorescent probe N-BODIPY,” *Scientific Reports* – Impact Factor 5.5 – 90th percentile in Multidisciplinary Sciences
• Tobin Peever (PP) and Weidong Chen (PP), “Use of metabolomics for the chemotaxonomy of legume-associated Ascoclyta and allied genera” SCIENTIFIC REPORTS – Impact Factor 5.5 – 90th percentile in Multidisciplinary Sciences


• Fang Zhu (Ent.), “Characterization of Class III Peroxidases from Switchgrass,” PLANT PHYSIOLOGY – Impact Factor 7.4 – 96th percentile in Plant Sciences

• Markus Lange (IBC), “Integrative Approaches for the Identification and Localization of Specialized Metabolites in Tripterygium Roots,” PLANT PHYSIOLOGY – Impact Factor 7.4 – 96th percentile in Plant Sciences

• Sanja Roje (IBC), “Identification and characterization of the missing phosphatase on the riboflavin biosynthesis pathway in Arabidopsis thaliana,” PLANT JOURNAL – Impact Factor 6.5 – 94th percentile in Plant Sciences

• Michael Neff (CSS), “Brassinosteroid signaling converges with SUPPRESSOR OF PHYTOCHROME B4-#3 to influence the expression of SMALL AUXIN UP RNA genes and hypocotyl growth,” PLANT JOURNAL – Impact Factor 6.5 – 94th percentile in Plant Sciences


• Kiwamu Tanaka (PP) and Andrei Smertenko (IBC), “Extracellular Alkalization as a Defense Response in Potato Cells,” FRONTIERS IN PLANT SCIENCE – Impact Factor 4.4 – 93rd percentile in Plant Sciences


• Kevin Murphy (CSS), “Preliminary Studies of the Performance of Quinoa (Chenopodium quinoa Willd.) Genotypes under Irrigated and Rainfed Conditions of Central Malawi,” FRONTIERS IN PLANT SCIENCE – Impact Factor 4.4 – 93rd percentile in Plant Sciences

• Doreen Main (Hort.), “The Impact of Genotyping-by-Sequence Pipelines on SNP Discovery and Identification of Markers Associated with Verticillium Wilt Resistance in Autotetraploid Alfalfa (Medicago sativa L.),” FRONTIERS IN PLANT SCIENCE – Impact Factor 4.4 – 93rd percentile in Plant Sciences

• Doreen Main (Hort.), “Genotyping-by-sequencing-based genome-wide association studies on Verticillium wilt resistance in autotetraploid alfalfa (Medicago sativa L.),” MOLECULAR PLANT PATHOLOGY – Impact Factor 4.8 – 93rd percentile in Plant Sciences

• Michael Pumphrey (CSS), “Association mapping of leaf rust resistance loci in a spring wheat core collection,” THEORETICAL AND APPLIED GENETICS – Impact Factor 4.1 – 95th percentile in Agronomy

• Zhiwu Zhang (CSS), “TCF21 is related to testis growth and development in broiler chickens,” GENETICS SELECTION EVOLUTION – Impact Factor 3.5 – 97th percentile in Dairy & Animal Sciences

TRANSLATIONAL

• Michael Cleveland (HD), “A Web-Based Intervention to Reduce Indoor Tanning Motivations in Adolescents: a Randomized Controlled Trial,” PREVENTION SCIENCE – Impact Factor 3.6 – 91st percentile in Public, Environmental & Occupational Health – Dr. Cleveland was also invited to guest edit a special issue on emerging adulthood

• Lee Kalsits (Hort.), Stefano Musacchi (Hort.), Sindhuja Sankaran (BSE) and Lav Khot (BSE), “Above and belowground environmental changes associated with the use of photoselective anti-hail netting in apple,” AGRICULTURAL & FOREST METEOROLOGY – Impact Factor 4.8 – 99th percentile in Forestry
• Markus Keller (VE), “Discharge of surplus phloem water may be required for normal grape ripening,” JOURNAL OF EXPERIMENTAL BOTANY – Impact Factor 6.2 – 95th percentile in Plant Sciences

• Barri Herman and Norman Lewis (IBC), “Eugenol specialty chemical production in transgenic poplar (Populus tremula × P. alba) field trials,” PLANT BIOTECHNOLOGY JOURNAL – Impact Factor 5.9 – 95th percentile in Plant Sciences


• Jill McCluskey (SES), “Consumer preferences for second-generation bioethanol,” ENERGY ECONOMICS – Impact Factor 3.6 – 94th percentile in Economics

• Markus Flury (CSS), “Is Biodegradable Plastic Mulch the Solution to Agriculture’s Plastic Problem?” ENVIRONMENTAL SCIENCES AND TECHNOLOGY – Impact Factor 6.4 – 94th PERCENTILE IN ENVIRONMENTAL SCIENCES

• Mei-Jun Zhu (SFS) and Min Du (AS), “Dandelion extract suppresses reactive oxidative species and inflammasome in intestinal epithelial cells,” JOURNAL OF FUNCTIONAL FOODS – Impact Factor 4.3 – 94th percentile in Food Science & Technology


• Pius Ndegwa (BSE), “Recycling separated liquid-effluent to dilute feedstock in anaerobic digestion of dairy manure,” ENERGY – Impact Factor 4.8 – 93rd percentile in Thermodynamics

• Troy Peters (BSE) and Doug Walsh (Ent.), “Effect of deficit irrigation on yield quantity and quality, water productivity and economic returns of four cultivars of hops in the Yakima Valley, Washington State,” INDUSTRIAL CROPS AND PRODUCTS – Impact Factor 3.6 – 93rd percentile in Agronomy

• Bin Yang (BSE), “Biological conversion of the aqueous wastes from hydrothermal liquefaction of algae and pine wood by Rhodococcus,” BIORESOURCE TECHNOLOGY – Impact Factor 5.7 – 96th percentile in Agricultural Engineering

• Shaojin Wang (BSE), “Dielectric properties of almond kernels associated with radio frequency and microwave pasteurization,” SCIENTIFIC REPORTS – Impact Factor 5.5 – 90th percentile in Multidisciplinary Sciences

REVIEWS/BOOKS

• Juming Tang (BSE), “Recent developments in high-quality drying of vegetables, fruits, and aquatic products,” CRITICAL REVIEWS IN FOOD SCIENCE AND NUTRITION – Impact factor 6.5 – 99th percentile in Food Science & Technology

• Qin Zhang, Manoj Karkee, and Lav Khot (BSE), MECHANIZATION AND AUTOMATION FOR APPLE PRODUCTION. Chapter on ‘Achieving Sustainable Cultivation of Apples’ Editor: Kate Evans (Hort.), In Press.
**Research & Extension Events**

WSU’s Organic Pest and Disease Management Fruit School, March 14th and 15th (hosted simultaneously in Wenatchee, Omak and Prosser). Organic agriculture is an important and growing sector of the tree fruit industry. With 26,000 acres of organic orchards in Washington, another 10,000 coming on line in the next two years, and $469 million per year in farmgate sales. **One hundred and seventy** growers and industry professionals attended the event to learn new practices for managing fireblight, codling moth, sanitation and natural enemy conservation. Organized by Tianna DuPont (Ext.), Achour Amiri (PP), and Wendy Jones (TFREC) and Gwen Hoheisel (Ext.)

Basic-Plus Cheese Making Course and Advanced Cheesemaking Workshop sponsored by the WSU Creamery, February 7th-9th (Mount Vernon). Since 1986, the WSU Creamery has been presenting the Cheesemaking Shortcourse. This course is designed for experienced cheesemakers, supervisory, management, quality control and marketing personnel from commercial/industrial plants. Topics include: Filtration Technology; Cheese Yield; Sanitation; Regulatory Issues; Milk Composition; Food Pathogens; Cheese Cultures; Quality Issues; How Cheesemaking Process Steps Affect Flavor; Body and Texture; Protecting your Product; Cheddar, Italian and Continental Cheeses; One Full Day of Hands-On Cheesemaking at the WSU Creamery. These events attract national attention.

WSU Extension’s William D. Ruckelshaus Center facilitated the first Snohomish County Health Leadership Coalition ‘Accelerator Event’ around improving childhood nutrition programs countywide. The Coalition’s ‘LiveHealthy2020’ program includes a series of Events that bring 45-50 countywide organization’s leadership together to help identify childhood nutrition program success factors, promising practices and barriers for upcoming alignment, scaling and ‘best practice’ efforts to reduce food insecurity in Snohomish County. Kevin Harris, Senior Facilitator of Health Policy for the Ruckelshaus Center works with the Coalition’s leadership and community signatories to provide the process design and facilitation to build capacity and improve health outcomes. LiveHealthy2020’s four domains include childhood nutrition, adult activity, mental health and wellbeing, and civic connectivity. The Ruckelshaus Center is a partnership between WSU and UW that provides university-based collaborative processes and neutral facilitation to help build public policy capacity and consensus among multiple sectors and organizations.

**WSU Extension Highlights**

The following new publications from the Youth and Families Program Unit are available online at http://pubs.wsu.edu or the Learning Library at http://extension.wsu.edu/learn/.

**EXTENSION LEARNING LIBRARY**

- Brittany Rhoades Cooper (HD) Drew Lenore Betz (Ext.), “How Can We Keep It Going? Key Ingredients for Evidence-Based Program Sustainability,”
- Stephanie A. Smith (Ext.) and Rachel Beck (Ext.), “What You Need to Know About Botulism and Canned Foods”
- Kayla Wells-Moses (Ext.), “Remaking Soft Jams and Jellies,”

**NATIONAL PUBLICATIONS**


**AWARDS**

- Meilana Charles (Ext.) has been selected as one of the recipients of the 2017 American Association of Family & Consumer Sciences (AAFCS) New Achiever Award. The AAFCS New Achievers Award recognizes emerging professionals who are demonstrating through their innovative programs or curricula the potential for making significant contributions in family and consumer sciences.
- Joy Lile (Ext.) completed her Doctorate in Human Development and Family Studies at Oregon State University. Joy is our 4-H Youth Development Specialist for Clallam, Jefferson, and Kitsap Counties.
PUBLIC OUTREACH

- Lauren Hrncirik (Ext.) returned from three weeks in Paraguay, where she took part in the USAID Farmer to Farmer (F2F) and Partners of the Americas program. [here](#)
- Jan Klein (Ext.), was a co-presenter at a Civic Education Summit, January 23, 2017, Olympia, WA that included Governor Jay Inslee and Washington Supreme Court Chief Justice Mary Fairhurst. The summit will launch a statewide effort to improve civics education for all Washington students, with the help of businesses, after-school programs, community groups, judges, lawmakers and individuals as well as schools.

GRANT FUNDING

- Gary Varrella, Brian Brandt, and Joy Lile, USDA NIFA/Kansas State University, $29.5K for Washington 2017 4-H Military Partnership Grant.
- Diane Smith USDA-NIFA/University of Vermont, $12.3K for Farm Fresh Food Boxes.
- Meilana Charles, Kitsap County DHS, $10K for Substance Abuse and Youth Strengthening Families DBHR.
- Elizabeth Weybright, National 4-H Council and the Walmart Foundation, $6K for Youth Voice Choice Presented by WSU YA4-H.
- Gina Ord, Washington State Department of Early Learning/Children’s Village of Yakima, $2.2K contract to support parents of children with special needs through health and nutrition.

Student News

- Trevor Robinson (Graduate Student, Ruckelshaus Center) was selected to receive the American Society for Public Administration ASPA Evergreen Chapter’s Graduate Student Award for 2017. He will attend an event at the Governor’s mansion in May to be recognized for the achievement.
- Cole Mueth and Raphael Adegbola, (PhD students in MPS and PP) were selected for the U.S. Borlaug Fellows in Global Food Security program. They will attend the 2017 U.S. Borlaug Summer Institute on Global Food Security during June 4-17 at Purdue University. Advisors: Scot Hulbert and Naidu Rayapati (PP).
- Yadi Olivera successfully defended her dissertation and is the 2nd person in the U.S. to graduate with a PhD in Prevention Science.
- Weizhen Liu, recent graduate of Crop and Soil Sciences, selected to receive the 2017 Jeanie Borlaug Laube Women in Triticum Early Career Award. As recipient of the award, she was also invited to attend training at CIMMYT in Obregon, Mexico, during March 2018.
- Sam Beck and Brennan Hyden (undergraduates) won Crimson Awards and Jessica Hartman (undergraduate) won the Novice Researcher Award at SURCA.
- Joseph Taylor was one of the three WSU graduate students highlighted in a recent Seattle Times titled “Advanced Degrees: A Critical Step to Changing the world.”
- Victoria Page, Hamid Esmaillo and James Reyes were winners of the SURCA Arts and Design Gray Award for their work as the WSU Collaborative on the design of prototype bus shelters for Pullman. A total of 15 students from the SDC participated in the Showcase for Undergraduate Research and Creative Activities. Topics included virtual reality in architecture, health and design in rural communities, experiential and cultural driven design, and design for behavioral and animal health.
- Thirty-one students in architecture, construction management, and interior design, along with faculty members Greg Kessler, Taiji Miyasaka, and Jason Peschel, visited Tokyo and Kyoto in Japan for the spring SDC 555 “Global Engagement in Design and Construction” course, March 8-18.
• Zachary Cartwright and John Johnson won 2017-2018 IMPA Scholarships. The scholarship also provides them an invitation to the 2017 IMPA Conference.

• Ryan Kowalski, Bon-Jae Gu, Maria Dian Pratiwi Masli, and Siyuan Wang received 3rd place in the Fiberstar Global Innovation contest for their product: Citri-Crunch Healthy Savory Extruded Pork Snack.

• Xiaofei Sun’s abstract was selected as a Poster of Distinction by the programing committee of the Gastrointestinal and Liver Section of the APS. The poster will be presented at EB2017 in Chicago.

• Andrea Garfinkel (PhD Student PP) was selected as a 2017 recipient of the Alexander A. Smick Scholarship in Rural Community Service and Development.

• Derick Jiwan (Post-Doc CSS and USDA Western Wheat Quality Lab) and an interdepartmental/college team went to the finals in the Environmental Innovation Challenge sponsored by Alaska Airlines. In addition to Jiwan, the team consisted of Andrew Jaboro (undergraduate Marketing), Yujin Sakashita (undergraduate Geology) and Henry Baker (undergraduate Marketing).

Facilities, Infrastructure & Programmatic

Notes on the Creamery Expansion. The bad weather in January slowed progress on the Creamery expansion. The substantial completion date has been pushed back to May.

WSU’s Island County Extension in Coupeville is now able to offer students enrolled at WSU’s Everett campus the ability to take certain classes without leaving Whidbey Island. It is being made possible through a Polycom video-conferencing system that allows students in Coupeville to view a lecture and also interact with the instructor and classmates through a 65-inch screen. This infrastructure is anticipated to serve students who rely on public transportation to get to campus. The work was highlighted in a front-page story in The Herald. Contact: Kimi Lucas and Nick Pappin (CAHNRS Operations)