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This Time Last Year, I was nearing the midpoint of a one-year appointment as interim dean. As you can see by this welcome, I currently remain in the role, and in fact will do so through the spring of 2016, with the word “interim” now removed from my title. I am honored and privileged to have been chosen to remain as dean for two years, and will do my very best to advance the strategic mission of CAHNRS, and to support our tremendous faculty, staff, and students. Our excellent Associate Deans—Kim Kidwell, Rich Koenig, and Jim Moyer—and I will continue to pursue and complete a number of important ongoing college initiatives and implement a number of exciting new ones, as well as ensure continuity and stability of college operations.

As many of you are, I am enthusiastically and totally committed to this magnificent college, university, and my alma mater (PhD, agricultural economics, 1978). The great satisfaction of teaching and mentoring students, the excitement of Cougar sports, and the thrill that comes from being on the forefront of invention and discovery are as intense for me today as they were when I first began my career at WSU years ago. This really is a special place, and our impact and effectiveness as an institution continues to grow through the dedication and stellar contributions of our excellent faculty and staff—and with your help.

In 2015 we look forward to marking an extraordinary milestone: nearing $250 million of support raised by CAHNRS during the largest-ever WSU capital campaign, which concludes this year. This investment has been truly transformational for our college in many ways—some of which are illustrated in this issue of ReConnect. I hope that you enjoy reading about campaign outcomes, in addition to the interesting developments in our research and academic offerings, here in our magazine for alumni and friends. I know that your passion for WSU endures as mine does, and I hope that you welcome every opportunity to reconnect.

Go Cougs!

Ron C. Mittelhammer
Dean of CAHNRS
$5 million gift raises Washington’s grain game
BY RACHEL WEBBER

A $5 MILLION GIFT from the Washington Grain Commission is helping WSU expand greenhouse facilities and advance grain research. Plant growth facilities are central to developing grain varieties through WSU’s plant breeding programs.

“When the Washington Grain Commission asked researchers at WSU what they felt the biggest limiting factor for moving their research forward was, they said they needed more greenhouse space,” said Washington Grain Commission Chair Steve Claassen. “This will be a huge benefit to Washington grain growers because researchers will be able to plant improved varieties of wheat and barley and they will be available sooner.”

The new facility will complement the existing 34,000-square-foot wheat research growth facility on the Pullman campus and provide WSU and USDA-ARS scientists with space and technology to conduct groundbreaking research. It will include innovative controlled environment growth rooms, greenhouse spaces, and laboratories where plant scientists will address some of the biggest challenges in agriculture and climate.

“This state-of-the-art plant growth facility is a solid example of the close relationship that exists between the WSU College of Agricultural, Human, and Natural Resource Sciences and the Washington Grain Commission that partnered to construct the facility, and USDA-ARS that funded the equipment necessary to conduct the research,” said Jim Moyer, director of the WSU Agricultural Research Center. “This partnership supports the kind of cutting-edge, responsive research required by a billion-dollar industry.”

To learn about the new facilities visit: cahnrs.wsu.edu/newgreenhouse.

To learn about the Campaign for WSU visit: cahnrs.wsu.edu/campaignforwsu.

Growing a Wine Science Center
WITH THE GRAND OPENING of the WSU Wine Science Center planned for this spring and the first classes to be held in the fall, WSU continues to pursue its mission to support the science behind Washington’s booming wine industry.

What makes the WSU Wine Science Center the most technologically advanced in the world is its combination of state-of-the-art research and teaching winery, specialized research labs, and classrooms, said Thomas Henick-Kling, viticulture and enology program director. In the winery, cutting edge technology and instrumentation will manage temperature on individual fermenters and continuously monitor and report fermentation rates, enabling research controls that were previously not possible. The center also includes a dedicated sensory and aroma analysis laboratory for studying wine aromas, plus specialized labs for plant physiology, wine chemistry, microbiology, and molecular biology.

The WSU Wine Science Center is funded in partnership with industry, community, and private donors, reflecting the excellence and enthusiasm of Washington’s robust wine industry. Washington is the second largest producer of wine grapes and wine in the United States, with those commodities worth nearly $9 billion to the state’s economy annually.

JOIN WSU this spring for the grand opening event. For updates and summer 2015 workshops at the Center, visit: facebook.com/winesciencecenter.

To learn about the new facilities visit: cahnrs.wsu.edu/newgreenhouse.
CHILDREN ARRIVE AT SCHOOL HUNGRY, don’t receive any nourishment during their five-hour school days, and can’t afford to bring food from home, according to teachers and school staff in Burundi.

That was the overwhelming response to questions posed by Washington State University Extension faculty during an exploratory trip in 2013.

Mary Katherine Deen and Kevin Wright hope to start reversing that hunger issue during another trip to the East African country in 2015. They are developing a 4-H program where a team of Washington 4-H and Extension faculty and volunteers will travel to Burundi and work with staff and students to develop school gardens and in-school meal programs.

Currently, most schools in Burundi don’t provide any meals for students. Starting a school garden would teach students how to grow crops and provide food for the school.

Deen, an associate professor in the Department of Human Development and an Extension 4-H Specialist, has a personal connection to Burundi since volunteering there in 2012. On that trip, she talked with people about youth programs like 4-H and heard interest in starting something similar.

During a 2013 trip to Burundi, Deen and Wright, director of WSU King County Extension, gave donated soccer balls to students and listened to educators explain what they needed to help their students.

In 2014, Charles Berahino, a program manager for Trauma Healing and Reconciliation Services (THARS), a 4-H partner in Africa, visited Washington to see how 4-H works in different counties. He traveled all around the state, visiting Clark, Jefferson, Snohomish, King, Spokane, Grant, Adams, and Whitman counties. That included a trip to Pullman for the annual 4-H Teen Conference, which is mostly organized by the teens themselves.

“Charles was so impressed that teens could rise to that level and have the confidence and ability to take on important leadership roles,” Deen said. “He wants kids in Burundi to feel empowered.”

“Burundi is very teacher-centric,” Wright added. “He’d never seen kids teaching other kids before.” Wright also said they’re making sure to listen to the Burundian educators and asking them if certain things will work.

“We want to increase their capacity in ways that work for them,” Wright said. “It’s not just a sales pitch. It’s a true partnership, [and] we’re respectful of the cultural differences.”

While 4-H programs reach 7 million people in over 50 countries, this will be the first program in Burundi, a country where ninety percent of the population of 8.5 million works in agriculture and less than two percent have electricity in their homes.
When picturing a third grade classroom, buzzing bees likely aren’t in the frame. It’s different in Beth Bartkowski’s classroom.

Last spring Bartkowski, a teacher at Canyon Elementary in Galt, California, guided her students on a journey into the life of the honey bee with the help of local beekeeper Brian Fishback. They even harvested honey in their classroom. What started out as a class service project to spruce up the school grounds ended up creating 23 committed young bee experts, engaging an entire school, and helping fund the bee breeding program at WSU.

“I wanted to do something with the quad area at our school because it had become overgrown due to budget cuts and groundskeeper layoffs,” said Bartkowski.

She decided to create a yearlong learning project focused on the honey bee after meeting Fishback during “Ag Day” at the local high school.

“When I wanted to do something with the quad area at our school because it had become overgrown due to budget cuts and groundskeeper layoffs,” said Bartkowski.

She decided to create a yearlong learning project focused on the honey bee after meeting Fishback during “Ag Day” at the local high school.

When the beekeeper visited Canyon for the first-time, he was taken aback by the hard work and enthusiasm both the teacher and students put into their project. “Surprised is an understatement,” Fishback said. “The classroom had been converted into a beehive.

“Beth’s students were so excited and knowledgeable about the importance of honey bees that I ended up returning to teach a beekeeping class to them,” he said.

The school granted Fishback permission to station a hive on campus for a week so the students could observe all stages of the brood.

“It was amazing. At first, even I was scared of bees. They have a bad rap,” said Bartkowski. “So, when we started, everyone was a little apprehensive but soon they were holding the drones. By the end there was no fear, they just loved bees.”

Bartkowski and her students transformed their school grounds into a pollinator’s delight. They created four gardens, one each for bees, butterflies, and hummingbirds, and one planted with succulents. Eventually the entire school got involved.

“It’s created such a level of respect, and not just with our grade level, because we invited the whole school to paint a rock to add to gardens,” said Bartkowski. “If students see anything wrong with our gardens—a piece of litter or something out of place—they are on it. Everybody has a stake in it.”

Not content with just learning about bees, the young apiologists wanted to help save the bees. The students really grasped that bees pollinate 80% of our crops. Brian did a little lesson on making a pizza and what your pizza would look like if you didn’t have bees. That really hit home.”

~Elizabeth Bartkowski

Pictured above in her “bee hive” classroom

Photos courtesy of E. Bartkowski

Bee garden and students at Canyon Elementary school.
Native bees provide ag support

As honey bee populations decline around the world, in Washington State David Crowder and Elias Bloom are considering a different breed of bees for pollination services.

“Honey bees are unusual in forming these huge colonies, whereas most native bees are solitary, building nests to support a few offspring,” said Crowder, an entomologist at WSU. But “scientists really don’t know what an optimal native bee community on a farm in Western Washington looks like.”

Bloom, a doctoral student working with Crowder, has teamed up with farmers in King and Thurston counties. So far, he’s collected about 2,000 bee specimens as part of a “bug census” to look at the ecology of bee communities in diversified farming systems that produce a variety of crops year-round.

Although some native bees produce honey, the ones Crowder and Bloom work with don’t produce enough honey to collect. And, although native bees are often less abundant, Crowder says that several species of native bees, working independently, can provide all the pollination services needed during a growing season.

Working directly with farmers, Crowder and Bloom will use what they learn about native bee populations to focus on practical techniques to increase bee habitat and promote native bee health and communities, including encouraging the planting of flowering strips with native plants and allowing bare ground and other habitats.

Crowder is hopeful that in five to ten years the research will drive changes in diversified farming systems for both organic growers and growers transitioning to organic systems.

This three-year research project is supported through a nearly half-million dollar grant from the USDA National Institute of Food and Agriculture.

For more information about the USDA NIFA project, visit: cahnrs.wsu.edu/nativebees-Crowder. To learn more about the Crowder lab, visit: entomology.wsu.edu/david-crowder/.

Don’t miss the January issue of Green Times, for all the buzz on bees in Washington: cahnrs.wsu.edu/greentimes.
KENDRA KNEPPER’S FATHER was a local firefighter involved in rescue efforts following the devastating mudslide along Washington State Route 530 in March 2014. In his honor, the WSU senior was glad to give back to her community by assisting in recovery efforts, along with 11 fellow Coug interns.

The students interned for nine weeks through WSU Snohomish County Extension to help the communities of Darrington, Oso, and Arlington regain their footing.

Giving back to their home towns

Seeing the slide up close for the first time made the event all too real, especially for students who had returned to Pullman after spring break, just before the disaster struck.

“It was a very emotional experience seeing the magnitude of the slide,” said Tesia Lingenfelter. “It wasn’t just a hill that came down—it was a mountainside.”

Colby Cavanaugh of Arlington wanted the communities to understand that WSU was a resource they could count on.

“We’re here to help, but we’re locals,” Cavanaugh said. “I am honored to have been able to help the community.”

Beyond summer, in it for the long haul

At the end of the summer internships, WSU President Elson S. Floyd viewed the site of the mudslide on his way to Darrington to meet with community members.

More than 80 people attended the community event where the president expressed his admiration for the spirit of collaboration among the communities impacted by the tragedy and offered continued support in the days ahead.

“We’re going to do everything that we can to help,” he said. “At the end of our initial commitment, if there is still significant work outstanding and ways in which we can continue to help in your recovery, we’re going to do that.”

WSU also provided tuition waivers for the 2014–2015 academic year to students from the impacted area, plus resources of WSU Snohomish County Extension to develop community and economic plans for at least two years. Snohomish County Extension hired a full-time community and economic development coordinator to work locally with businesses and government officials as well as families and youth through 2016.

Becoming whole again

With all WSU has offered so far, including expertise to improve energy conservation, digital connectivity, and tourism and hospitality, the mayors of two impacted communities couldn’t be more pleased.

“WSU has been an amazing partner that came to the table pretty early on, recognizing that there would be some long term impacts and urging us to start thinking about the next steps and to put together some recovery plans,” said Arlington Mayor Barbara Tolbert.

“I’m really pleased with how much [WSU has] helped my community,” said Darrington Mayor Dan Rankin. “That goes beyond the interns and the tuition. It goes with feasibility issues and all of those things that really help us become whole and well again.”

Learn more about WSU’s efforts to support these communities or make a donation online at: mudsliderecovery.wsu.edu.
NEVER BEFORE has such a vast amount of genetic information been available to tree fruit breeders. Today, Washington State University researchers know enough about the natural diversity within a species’ genetic code to enrich centuries-old tree fruit breeding techniques. Here in the Northwest, this means increasing tree fruit yields while leaving a smaller environmental footprint. For consumers, it means better tasting apples, cherries, peaches, and other tree fruit.

BY SYLVIA KANTOR
At the heart of these improvements is genomics, the study and mapping of genetic material, or DNA. In 2010, WSU scientists unraveled the genetic code of apples and in 2013 the code of pears and cherries, in hopes of one day breeding better fruit. With this genomic wealth, “we can make more efficient decisions about which plant parents to combine to get the traits we’re after,” said WSU apple breeder Kate Evans. It greatly increases the odds that the desired traits will show up in the offspring seedlings, she said.

**Genetic Sign Posts, Interpreted**

Cameron Peace, a WSU tree fruit geneticist, identifies genetic markers and develops DNA tests that enable breeders like Evans to develop fruit varieties that better reflect consumer preferences. For the WSU apple and sweet cherry breeding programs he develops tests to predict traits of fruit quality like sweetness, crispness, size, and color, as well as traits associated with productivity such as disease resistance and self-fertilization.

The holy grail of the apple eating experience is a perfect balance of tartness and sweetness. But crispness is also vital.

“Honeycrisp is the only major apple variety that has an ultra-crispness,” Peace said. “Now we have a genetic tag for that so we can make sure new varieties are crisp plus have other qualities.”

Scientists have also recently discovered areas in the apple genome that allow them to develop DNA tests for sweetness.

“We can make fruit more exciting. We can breed fruit that has higher sweetness so kids are eating fruit instead of candy,” said Peace. “I want everyone to be eating as much fruit as I do!”

Evans relies on marker-assisted breeding to make decisions in two ways. First, she uses it to select which parents to cross to get seedlings with the desired traits. Second, she can analyze seedlings for particular traits through leaf samples, so only those with the traits she’s after move to the next phase of breeding. Since it’s not uncommon for 50 to 90 percent of the seedlings to get tossed, the cost savings from not growing out the inferior seedlings to the point of fruit production is significant. Peace estimates the savings to be around $50,000 a year.

Because the process of developing DNA tests for tree fruit is very complex, Peace relies on collaboration with researchers across the nation. He also relies on information technology.
Bioinformatics

The vault of information unlocked by genomics is vast and requires sophisticated technology to manage and interpret the data. Dorrie Main, a bioinformaticist at WSU, applies information technology, statistics and mathematics to store, manage, process, analyze, disseminate and visualize DNA data. In other words, she helps researchers and breeders like Evans make sense of the immense amount of genetic data now available.

Main and her team created an online tool called CrossAssist to help breeders make decisions about which varieties to cross.

“If a breeder knows what attributes they want in their apple offspring—like a certain level of sweetness—the tool will suggest the best parents to cross,” Main said.

With 20 years of data to aid in the decision making, this would be nearly impossible without such tools.

Researchers across the globe rely on the web-based Genomic Database for Rosaceae, also developed in Main’s research lab. The database provides data mining tools and public access to genetic and breeding data for the Rosaceae family which includes almond, apple, blackberry, cherry, peach, pear, plum, raspberry, strawberry, and its namesake, rose.

So Much Time, So Many Trees

Developing new varieties of tree fruit is not for the impatient. The original cross that resulted in the now popular Honeycrisp apple was made in 1960 at the University of Minnesota. It was patented in 1988 and released for commercial production in 1991. Twenty three years later, the variety has become quite popular.

It may take 15 to 30 years to get from the original parent cross to the commercial release of a new variety [see side bar, on left] but the process doesn’t simply end with an appealing apple.

“You have to find a market for the crop,” Evans said. “If a grower spends $25,000 to $30,000 per acre to plant a new variety, they want to be sure they’ll have a market for the crop,” she said.

Once a market has been created, the next challenge is supplying enough trees to meet demand—at 1,500 trees per acre this quickly adds up to millions of trees. Once a new variety is released it may take another five to fifteen years to reach full-scale production.

Discovering the Future

Discoveries in science and technology hold promise for one day greatly increasing the number of trees produced in a year, producing healthier trees, and ensuring that growers receive the exact cultivar they ordered. It may even be possible to shrink the timeline for scaling up commercial production of new cultivars.

The art and science of developing tree fruit that meets the evolving demands of a changing world depends on innovations like those of Evans, Peace, Main and the rest of tree fruit research community at WSU. No doubt it will also depend on discoveries yet to be made by the students they mentor.

Read about the newest apple release from WSU at cahnrs.wsu.edu/cosmic-crisp.
BY SCOTT WEYBRIGHT

IN A STATE known for its apple production, Tim Smith is a legend among farmers and in the tree fruit industry.

“Tim has kept us not only current, but pushed the scientific boundaries,” said Jim McFerson, manager of the Washington Tree Fruit Research Commission. “He has provided growers with crop production and crop protection for decades.”

Smith, an Extension Educator for Washington State University based in Wenatchee, retired in August, but is still working part-time.

Conservative estimates put the value of Smith’s work at $2 billion in savings for Washington tree fruit growers, over the course of his career.

“Without Tim, we wouldn’t be in the good position we are now with tree fruit production,” McFerson said.

“When I first came out to Washington 15 years ago from upstate New York, the first person I met with from WSU was Tim,” McFerson said. “It was a three hour meeting and I still remember some of the points he made. He got me up to speed so quickly because he’s so knowledgeable about this industry. His impact will continue for years to come.”

One example of Smith’s impact is on how orchards are replanted. Mature orchards often develop a fungus in the soil that can damage the roots of new trees. This cripples the growth and fruit production for the entire life of each new plant.

While working in Central Washington, Smith discovered this replant disease and found that certain soil fumigants can control the disease, if applied before new trees are planted. According to Smith’s research, untreated replanted orchards could expect a 20–50% loss in production over the entire life of an orchard due to soil replant disease.

Replanting tree fruit orchards can cost around $30,000 per acre, so losing significant production hurts, McFerson said.

And that’s just one area Smith has tackled in his 39 years with WSU Extension.

“I call Tim a jack-of-all-trades and master of many,” said Jay Brunner, director of the WSU Tree Fruit Research and Extension Center in Wenatchee.

Brunner said Smith developed a model that predicts the high-risk periods for a deadly-to-trees bacteria called Fire Blight. Known as the CougarBlight model, it allows growers to apply protection to their trees before the blight hits. The model also means less protective spray is used because sprays aren’t applied when the risks are low.

It’s hard to estimate the economic impact of a model, since it’s preventative, but that doesn’t diminish its effectiveness, Brunner said. “Anyone in the industry would say the fire blight model is one of the most important tools they use in managing their orchards.”

Smith will remain in a half-time position with WSU Extension, allowing him to keep up with his most important projects.

“In Central Washington, agriculture is our Boeing. Saving our growers’ produce has a huge economic impact.”

~Tim Smith Extension Specialist

Fire Blight on apple tree.

Photo courtesy of I, Paethon, via Creative Commons 3.0.
The Next Century of Extending Knowledge and Changing Lives

For a centenarian, Washington State University Extension is looking strikingly fresh.

BY DORA ROLLINS

ITS CENTENNIAL renewed Extension’s commitment to “bring the college to the people,” as decreed in the 1914 originating legislation. Today’s Extension faculty are well past the trial-and-error approach the first farm agents and home economists used, but the learning process continues.

These roots in change have enabled Washington’s land-grant university to adapt itself to remain a vital service for a constantly shifting public and environment.

What can be expected from WSU Extension in the next 100 years? The organization is already showing new layers and textures—and capabilities—to address population shifts, urbanization, and technological advances. Director Rich Koenig advises Washington stakeholders to “fasten your seatbelt.”

Diversifying audiences and outreach

The Hispanic population in Washington is growing five times faster than the state’s overall population. WSU Extension has recognized the financial and cultural gains this represents by creating programs that build on long-standing Latino interests and talents.

José García-Pabón is key to reaching this targeted group. His is a friendly face in what he describes as a “sea of white.” The Latino community and economic development specialist is devoted to increasing the number of Latino small business owners, Latino high school and college graduates, and Extension specialists who serve Latino clients.

“My approach to assisting and supporting my audience is constantly adjusting,” he explained, because Latinos are a mix of cultures and races with highly varied experiences in this country. “However, my values of respect, not judging or stereotyping, and empathy remain constant.”

García-Pabón, through his involvement in the Latino Leadership Initiative (LLI), is helping reduce the disproportionately high dropout rate for Latinos through creating transformative relationships between Latino college students and accomplished professionals. These connections not only motivate the students to continue their own education, but also to become mentors for middle and high school students.

“When extension teaching can be applied to the increase of practical human skill and genuine human efficiency—when by reason of it men and women, groups, or communities can think, live, and work better and more truly, that is best of all.”

F. F. Nalder
State College of Washington alum and Extension director, The Pow Wow, November 1919
LLI graduates are earning GEDs and four-year college degrees, and García-Pabón sees them as future leaders with strong community values and a sense of social responsibility—at all levels of power in the state and nation.

Exploring new territory

Population density presents another set of opportunities for Extension in Washington. Focusing on the unique nature of the urban west is proving to be especially successful for short-term projects initiated by community groups.

Brad Gaolach, the first community sustainability specialist at WSU Extension, looks beyond the jurisdictional boundaries of local governments and academic disciplines from his home base in Seattle. He brings together university experts to help urban decision-makers solve local problems with policy changes that give residents new options.

On a recent project aimed at building connections between planning and health, equity, and sustainability efforts, Gaolach asked WSU colleagues from the WSU Division of Governmental Studies & Services, School of Economic Sciences, and Master Gardener Program to collaborate with 11 other service providers on 25 planning resource guides for 10 municipalities in King County. The goal was to enable smaller jurisdictions in the area to provide residents with increased opportunities for physical activity, healthy eating, and affordable housing.

“Brad facilitated a connection between our work and the WSU network,” said Liz Underwood-Bultmann, associate planner for the Puget Sound Regional Council (PSRC) that led the project. Faculty contributions on crime prevention through environmental design, transit-oriented development, and engagement through community gardening taught the PSRC, as a regional planning agency, more about the scope of WSU Extension’s work, as well as their willingness to share their expertise, said Underwood-Bultmann.

Growing the possibilities

Regardless of the demographic profile, technology is associated with solutions for most of Washington. WSU Extension’s AgWeatherNet (AWN) illustrates how far-reaching those solutions can be. Computer models use data from one hundred fifty-five WSU weather stations around the state to deliver customized management alerts via smartphones. As a result, Washington crop and livestock producers can make decisions that maximize yields with minimum financial costs and environmental consequences. Home gardeners and other states are finding applications too.

“The system has played a key role in WSU’s modernization,” saidAWN director Gerrit Hoogenboom, and made the university a leader in demonstrating the practicality of science. According to Koenig, this added value is “the perfect juncture between research and outreach.”
WSU specialists serving producers of tree fruit, grapes, and small grains have developed AWN-compatible models to combat pests, diseases, high and low temperatures, and water deficits. Users of the Tree Fruit Decision Aid System (DAS) estimate it saves the industry $18.8 million per year, primarily from reduced pesticide applications, according to Vince Jones, director of DAS.

The Irrigation Scheduler developed at the WSU Irrigated Agriculture Research and Extension Center works for crops grown in 10 states and can be adapted to serve in the other 40. This online tool supports a nationwide priority by showing growers how to decrease water use by up to 30 percent.

The organizational remodel

Today’s version of WSU Extension is an obvious update of the organization created in 1914. The varied approaches, new connections, and innovative partnerships reveal a mature, yet modern educational network that is building on the wisdom from a century of service.

For a centenarian, WSU Extension remains vigorous, hard at work extending knowledge and changing lives, while looking—and moving—forward.

BRANCHING OUT: Serving the Colville Reservation through Extension

BY RACHEL WEBBER

IT’S NOT EVERY DAY a new office joins the university Extension network, but in 2014 the Confederated Tribes of the Colville Reservation and Washington State University established the first Tribal Extension office in Washington State.

“As we celebrate 100 years of Extension, it’s fitting that we start out the next 100 years by having our office designated as a self-directing Extension office,” said Linda McLean, enrolled Colville tribal member and Colville Tribal Extension’s new director. This project is close to her heart, as Extension programs have been a huge part of her life since she was young.

Growing up on the Colville Reservation in the Keller District, she was actively involved in 4-H for 10 years. Now she and her family raise beef cattle and dryland grain crops, applying what she learned in 4-H and through Extension to her family’s ranching operation. Her own children are also 4-H alumni. She knows that their 4-H participation taught them valuable life skills—the kind needed to become caring, contributing citizens.

For the past 25 years, WSU and the Colville Confederated Tribes have been working together to support families, farmers, and youth through Extension programs in Ferry and Okanogan counties, said WSU Extension Tribal Liaison, Dan Fagerlie. He shared a story that a tribal elder once told him about how a seedling that grows under another tree looks protected by the mother tree, but it grows up spindly. It needs to be out on its own in the rain and wind to grow up strong on its own.

“Now tribal extension is no longer a branch office, but out on its own,” Fagerlie said. “It’s grown its own roots and now it’s self-directing. As such, the director will work with the tribal council and leaders, along with help from WSU, to determine what the priorities are and what their programs will look like in the future."

WSU Provost Daniel Bernardo shared WSU’s commitment to diversity, inclusiveness, and educating the people of Washington State from all different incomes and ethnic backgrounds. He said about 38 percent of this year’s incoming freshmen will be students of color and nearly 44 percent will be first-generation college students.

Rich Koenig, WSU Extension director, also congratulated McLean, Fagerlie, and other partners on their commitment to seeing the process through.

“Truly, it is a historic moment to officially designate this office as the 40th member of the WSU Extension network,” Koenig said.

Fagerlie, who has been working with the tribes for the past 34 years, gave thanks to WSU Extension leadership which included WSU Tribal Liaison Barb Aston and State 4-H Director Pat BoyEs, as well as the Colville Confederated Tribal Council and the private donors who have made the self-directed Extension office possible.

In October 2014, the WSU Colville Reservation Extension team received the USDA National Institute for Food and Agriculture Partnership Award for Effective and Efficient Use of Resources, in Washington D.C. The award citation reads, “Honoring the Confederated Tribes of the Colville Reservation for their commitment to partnership and education, for empowering people and inspiring positive change across communities.”

To read more stories from the Colville Confederated Tribes and others impacted by their WSU Extension experiences, visit the 100 Years of Extension Story Project at cahnrs.wsu.edu/ext100.
THE FOOTPRINT of the WSU College of Agricultural, Human, and Natural Resource Sciences is both deep and wide.

Deep, in that it dates back to 1892, when a treeless hill in rural Eastern Washington became WSU’s first college: Washington Agricultural College and School of Science.

Wide, in that CAHNRS has grown to 15 academic departments—ranging from agriculture to animal sciences, from human development to interior design—plus four research and extension centers, and 39 extension offices covering every county of Washington state and the Colville Confederated Tribes.

But footprints aren’t always physical. CAHNRS is also making a virtual impression, using online technology to bring its expertise to learners unable to come to a physical campus.

But many of these online programs involve working with the land—which may, at first glance, seem counterintuitive: How can you teach soil-based skills over the Internet?

“Online students use their homes, neighborhoods, and work environments as living laboratories,” said Kim Kidwell, executive associate dean for CAHNRS. They may be asked to collect weeds from their yards, explore the impact of pesticides on local lawns or parks, visit a soil-testing lab or water-quality facility, or collect data on plants they grow at home.

Some programs require an internship that requires students to use in real life what they are learning online, Kidwell said. The organic ag certificate, for example, requires working with an organic farmer, business, or certifying agency. The gerontology certificate requires 180 hours of on-site work. The plant health management master’s program provides regional students with access to top WSU researchers at the four CAHNRS research and extension centers.

“This on-site work not only gives online students the chance to tailor their educations to their environments,” Kidwell said, “but also allows them to network with prospective employers.”

Traditional goal, modern method

The goal of reaching students where they live goes back to the university’s founding in 1890, two years before a $1,500 brick building called the Crib opened its doors to the first 59 Washington Agricultural College students.

“As a land-grant university, WSU’s historic role has always included going beyond campus boundaries,” said Dave Cillay, vice president of
the WSU Global Campus, which works with CAHNRS faculty to create online programs. “Now, with these new online tools, WSU can address both distance and time: Students no longer need to drive to a campus, and they don’t have to study at any specific time. That opens up the possibilities of a WSU education to students and working professionals around the world.”

Online programs at CAHNRS include:

- Undergraduate
  - Certificate in organic agriculture
  - Certificate in gerontology
  - Certificate in early childhood education
  - Degree in human development
- Tidal Leadership Certificate (See sidebar)
- Graduate
  - MS in agriculture
  - MS in agriculture emphasizing plant health management
  - MS in agriculture emphasizing food science and management
  - Graduate certificate in sustainable agriculture (Spring 2015)

**Tidal Leadership Certificate helps you chart new course**

**ONE OF THE NEWEST ONLINE OFFERINGS in CAHNRS is the Tidal Leadership Certificate.** Earning this certificate gives recipients the skills to “consciously navigate a challenging situation with purpose and intention,” said Kim Kidwell, executive associate dean for CAHNRS. “Instead of simply reacting to a situation, perhaps in a non-constructive manner, you will learn how to create a pause in which you can assess the landscape, clarify your purpose, and choose a productive response.”

The certificate requires completion of 12 online learning modules in 12 weeks. Eight modules are asynchronous assignments and four are online class meetings at scheduled times. Participants also create a portfolio that demonstrates their expanded leadership skills.

One recent certificate recipient, Kidwell said, was in a contentious and deadlocked meeting. The recipient’s first reaction was to defend her point of view, but the Tidal Leadership training caused her to pause and ask, “What do we hope to accomplish here? Are we trying to achieve the same end goal?” She was then able to guide the group toward an acceptable compromise.

For more information on CAHNRS online programs, please visit the WSU Global Campus: [globalcampus.wsu.edu](http://globalcampus.wsu.edu).

For more information on the Tidal Leadership Certificate, visit: [tidal.wsu.edu](http://tidal.wsu.edu).
PROFESSORS DON’T USUALLY PICK the college or university they work for. They go where there’s a job and learn to love, or tolerate, the location.

Laura Hill’s journey didn’t quite work that way.

“My husband and I were looking for a place to live and discovered Moscow and the Palouse,” said Hill, who was telecommuting while working on a large national grant after earning a doctorate from Vanderbilt University. “I didn’t want an academic career because I didn’t want to move my family around a lot.”

That was in 2000, and it’s fair to say Hill never expected to be a professor, let alone the new chair of the Department of Human Development in the WSU College of Agricultural, Human, and Natural Resource Sciences.

Hill took over as chair before the Fall 2014 semester, succeeding Tom Power.

“I’m so pleased that Laura is our new chair,” said Power, who stepped down after 13 years of leading the department. “She knows the department and the discipline, is an effective administrator, and is well connected across the state. She’s also respected and liked by students and faculty alike. I’m confident she will do an excellent job and I look forward to her contributions.”

The new position came as a surprise to Hill, however.

“It was never my goal to lead a department,” she said. “But I couldn’t be happier or more grateful for the work I’m able to do.”

One goal she has is expanding the department’s new graduate program in prevention science.

“It’s one-of-a-kind in the country,” Hill said. “And there appears to be high demand, so we expect that it will keep growing.”

After spending much of her 20s living in Athens, running a study abroad program in Greece, Hill trained as a clinical psychologist as a second career. But she came to believe she would be more productive if she could help prevent the problems she saw in her clinical work, rather than treating those already suffering.

“I would have an hour to work with a child, then send them right back to the situation that caused the issues,” Hill said. “I wanted to learn how to prevent those situations in the first place.”

She studies ways to translate the research conducted at universities like WSU into best practices and programs that directly impact the lives of children and families.

The mother of a grown daughter, Hill also developed a handbook for parents of college freshmen.

“Many parents don’t know how to support their child’s independence when they go away to college,” she said. “We’re trying to help parents help their kids.”

Her work goes beyond typical issues like substance abuse. She helps parents identify the values that are most important to them and use those to guide their decisions. Students benefit from parental reminders to think about their priorities and values while in college, she said.

Hill knows about priorities, which is how she wound up at WSU. She and her family found a place they wanted to live, and she just happened to find her dream job.

“I’m incredibly lucky,” she said. “This is a wonderful department and I get to work with so many hungry young minds on campus. I can’t imagine anything better.”
A NEW DECADE, A NEW FARM
BY RACHEL WEBBER

Quinoa plants standing taller than five feet, blossoming buckwheat, and all kinds of fruit trees were cropping up at the WSU Eggert Family Organic Farm last summer. In the fall, the community came together to celebrate the annual harvest festival with haywagon rides, cider, and guessing the weight of a giant pumpkin.

It’s hard to believe it was just ten years ago that the WSU organic farm became the first certified-organic teaching farm in the United States. For the last decade, the farm’s community supported agriculture (CSA) program has provided fresh, local produce and served as a teaching tool to prepare the next generation of farmers for small scale and organic production.

Now, as the original WSU organic farm expands from inside the boundaries of the WSU Tukey Horticulture Orchard to a site closer to campus and even more accessible to students, farm manager Brad Jaeckel said their team is ready to be there in earnest this spring.

Plants and People, Too

Motivated by a growing concern about the long term health of conventional agriculture, Regents Professor and Natural Resources Defense Council’s 2014 Growing Green trailblazer John Reganold has devoted more than three decades to bringing innovative research and teaching on sustainable farming systems into the mainstream of higher education and food production.

His focus on ecologically innovative farming systems such as organic, integrated, and no-till systems, led him to establish the first four-year organic agriculture major in the United States, and, in collaboration with fellow faculty and partners, the original 3-acre certified-organic teaching farm.

The most recent field day held, in part, at the new 30-acre farm location was a special occasion for WSU alumna, associate professor, and research leader Lynne Carpenter-Boggs (’97), who has also played an integral role in the development of both the university farm and food systems worldwide. She was honored by the WSU Alumni Association with their 2014 Alumni Achievement Award.

From Palouse to Bangladesh

Although much of Carpenter-Boggs’ work is focused in the Pacific Northwest, she has also advanced WSU engagement in areas where arsenic-contaminated soils cause significant health issues, especially in the Ganges River delta in south Asia. There, ground water is contaminated with arsenic and resulting crops have high arsenic concentrations. Arsenic poisoning is widespread, with 1 in 5 deaths in Bangladesh attributed to arsenic.

Carpenter-Boggs leads a research team at WSU whose focus is to reduce dietary intake of arsenic from consumption of lentils by integrating crop and soil management with plant breeding and genetics. She’s also engaging students in the issue. WSU International Programs chose arsenic contamination as the subject of their Global Case Challenge in 2014. Thanks to a generous sponsor, the winning team and faculty advisors (including Carpenter-Boggs) spent Thanksgiving studying the issue in person, in Bangladesh.

“It is not, however, her unselfish service to the university, or her productivity, for which she deserves this award,” wrote her award nominator Stewart Higgins. “One hallmark of Dr. Carpenter-Boggs’ research is that she approaches the research from the perspective of the farmer’s family, rather than from the perspective of an academician. This approach comes naturally to Lynne by virtue of her compassion, and it is this compassion that sets her apart.”

For regular updates on the WSU Organic Farm, follow the team on Facebook at: facebook.com/wsuorganicfarm.
One twig can be broken easily, but put four together and they are harder to break.

That adage, passed down to Washington State University alum Tom Kitayama and his five siblings by their father, became a source of strength during the most difficult historical time for Japanese Americans in this country—forced incarceration in internment camps during World War II.

It also proved a powerful catalyst for Kitayama and his brothers when they started a greenhouse business in California that blossomed into the largest carnation grower in the state, eventually selling fresh-cut flowers in eight other states.

The wisdom holds true just as strongly today for succeeding generations, though Kitayama passed away in 2007, just shy of his 84th birthday.

“That legacy went all the way through our lives,” said Kitayama’s son Dave, who handles new business development for Kitayama Brothers of Watsonville, California.

Strength in Family

Kitayama, for all his ties to the Golden State, was born and raised on Bainbridge Island, Washington, the eldest of six children for Takeshi and Masuko Kitayama. Plants were already in the boy’s genes.

“My parents operated a small greenhouse, raising flowers during the winter months and tomatoes and cucumbers during the summer months, which we sold to local grocery stores,” Kitayama wrote in his autobiography.

When he came to Washington State College in September 1941 to study agriculture, Kitayama met his future wife, Heidi Horikawa, a student of Whitworth College in Spokane, through the school’s Intervarsity Collegiate Christian Fellowship; she later transferred and graduated from WSC as well. The couple would have six children of their own: Tom Jr., Susan, Dave, Dennis, Barbara, and Monica.

“My dad was strong in his faith,” said Monica Cathcart. “It was so important to him.”

Wartime Haven

Kitayama’s faith was never more important than on Sunday, December 7, 1941. As word of the bombing of Pearl Harbor reached the Pullman campus, Kitayama was preparing to go to church at his college dormitory when he heard men gathered outside the building “cursing the ‘Japs’ because this meant that they had to go to war,” Kitayama wrote.

“I wanted to stay in my room, but my fellow Christians ‘made’ me go to church that Sunday,” Kitayama recalled in his autobiography. They “gave me the encouragement to face the world and to stay in college...”

WSC served as a haven for Kitayama and other Japanese American students. The college and eastern Washington were not among the Pacific Coast regions whose Japanese American residents were uprooted from their homes and livelihoods and shipped to internment camps.
During the war, some 120,000 Japanese Americans were sent to 10 such camps in seven states.

“I was glad that I was in a college town... because students and faculty were tolerant, and the fear of prejudice against the Nisei (second generation, children born to Japanese immigrants) waned,” he wrote.

**Reunited in Business**

Kitayama’s family on the western side of the state was not as fortunate. On March 2, 1942, his parents and siblings were sent to the Manzanar War Relocation Center in California. Later, the family was separated, with two brothers and a sister shipped to the Minidoka War Relocation Center in Idaho.

“That bothered my father a lot,” said Dave. “It was a hard time for him.”

After graduating from WSC in January 1945, Kitayama got a job working for the Washington State Agricultural Experiment Station in Pullman. Heidi graduated in May 1946. A year later, Kitayama and Heidi moved to Hayward, California, to work for San Lorenzo Nursery. By the end of the 1940s, his mother and siblings returned from internment, wartime service, and college to join Kitayama as they first rented greenhouse space, then purchased land in Alvarado, California, for a family-run operation. Kitayama Brothers—with Tom and his brothers Ray, Kee, and Ted at the helm—was born.

Today, Kitayama Brothers is a multimillion-dollar business that grows and ships flowers nationwide and to Canada, selling mainly to wholesale florists, bouquet makers, mass markets, and large-event florists.

“His mantra was always that you get what you work for,” Dave said. “[The internment and war experiences] made my father very social. He was very happy in California and the life he built there. He was very pro-America for giving him a fresh start.”

**Mayor Kitayama and the Next Generation**

The civic minded Kitayama went on to become the first Japanese American to hold public office in California as the Mayor of Union City—just 14 years after the end of World War II. Over a 32-year political career—the longest of any Union City elected official—he also served as a planning commissioner and councilman.

Kitayama’s example of strong family ties, hard work, and public service continues today. Five Kitayama men run the company, as when it first started: Kitayama’s sons Dave and Dennis, and their cousins Robert, Scott, and Stuart. The family also continues to support education with a college scholarship fund for Alameda County students who show scholastic achievement, leadership ability, and participate in community and extracurricular activities.
PARTNERS IN LIFE AND SCIENCE, Frank and Mary Loewus passed away in 2014 within a few months of each other. They were retired from the WSU Institute of Biological Chemistry (formerly the Department of Agricultural Chemistry) where they worked from 1975 to 1990. They were renowned for their groundbreaking work on plant carbohydrate metabolism, vitamin C, and the biochemistry of inositol. Frank, 94, passed away on January 21 and Mary, 91, on March 12. They had been married for nearly 70 years.

A passionate advocate for the scientific community, Frank served as president of the Phytochemical Society of North America (PSNA) in 1975 and later organized the first joint annual meeting of the American Society of Plant Physiologists (ASPP; now ASPB) and PSNA. Mary was an expert crossword puzzle and word game enthusiast. In 2002, she won the New Oxford American Dictionary Challenge. She donated the bulk of the prize, $10K worth of books from Oxford University Press, to the WSU Libraries. Their legacy lives on through the Frank and Mary Loewus travel awards given annually by the PSNA to deserving undergraduate and graduate students working in the field of phytochemistry.

Jim Corliss (Horticulture, ’58), was awarded Washington Health Care Association’s 2014 Silver Spotlight, to honor his WW II service and long history of community service through the Grandview Senior Center and the WSU Master Gardener program. A native of Yakima, Jim and his wife, Jean, raised a son (Kevin, Horticulture, ’86) and a daughter on their grape farm outside Grandview, as members of the National Grape Cooperative. Jim is currently a resident at Prestige Care & Rehabilitation in Sunnyside.

Mark Ufkes (Business, ’77; Ag. Econ. ’85; M. Adult & Continuing Education ’87) is the Executive Director for the Quileute Tribe on First Beach, in La Push, Washington. Mark works with the Tribal Council to manage 11 Tribal departments, 5 Tribal enterprises, over 175 employees, and an annual budget of over $7 million.

“The Quileute are some of the most interesting and friendliest people on earth,” he says. “We get the freshest seafood on the planet here, too. And you should see the sunsets from First Beach between winter storms!”

Mark is also a beekeeper and scoutmaster, mentoring boys and families toward their Eagle Scout award. He, his wife Lois, and two boys live in White Center, near Seattle.

Photo courtesy of the Sunnyside Daily Sun News
The following True or False quiz will help measure how much you know—or don’t know—about having a will and supporting WSU and CAHNRS through your estate plans. When you are done, check your answers below.

**TRUE OR FALSE?**

1. If I die without a will, my entire estate will go to my spouse.  **F**
2. A married couple only needs to have one will.  **F**
3. If I create a will, my estate will not have to go through probate.  **F**
4. I cannot support WSU and CAHNRS through my will.  **F**
5. If I want to support WSU and CAHNRS through my estate, I will have to rewrite my will.  **F**
6. Very few individuals support CAHNRS through their wills.  **F**

All of the statements are false.

1. In Washington State, if your spouse survives you, your children inherit ½ of your separate property and if no children, your parents or siblings receive ¼ of your separate property. Laws about wills vary by state.
2. Each person in a marriage needs a valid will.
3. Probate is a process of administering your estate by submitting a valid will to the court, appointing a personal representative to handle estate matters, and distributing the estate to beneficiaries.
4. You can pass on your legacy to WSU and CAHNRS through a bequest in your will. The CAHNRS Alumni and Development team can provide you simple bequest language.
5. You can include WSU and CAHNRS as a beneficiary of your will by attaching a codicil, a provision that amends one or more provisions of a valid will. You can include this provision in your will by adding a codicil to your will.
6. During our current campaign, CAHNRS has received $4.4 million in bequests from individual estates. The median gift received is $50,000.

To learn more about wills and how to support CAHNRS or another area at WSU through your estate plans, contact the CAHNRS Alumni and Development office at 509-335-2243 or visit the WSU Gift Planning webpage at foundation.wsu.edu/giftplanning.