2014 reCONNECT
WSU COLLEGE OF AGRICULTURAL, HUMAN, AND NATURAL RESOURCE SCIENCES ALUMNI & FRIENDS

New!
Wine Science Center breaks ground

PLUS: SAVING HONEY BEES ■ REFASHIONING AMDT ■ TRANSFORMATIONAL LEARNING
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Message from the DEAN

Ron C. Mittelhammer
Interim Dean of CAHNRS

Calling all Cougs!

COUGS, BOTH NEAR AND FAR, can always be counted on to answer the call of duty and fill a need when it arises—as was the case this past spring when Dan Bernardo, Dean of CAHNRS for more than eight years, was asked to serve as interim provost while the university seeks a permanent executive officer. Dean Bernardo’s appointment meant that CAHNRS then needed its own interim leader, and I was honored to be asked to step up.

Our CAHNRS community, alumni, affiliates, and friends maintain this same ethic: the commitment to a grander mission with continually expanding impact is embodied in the partnerships we forge. I witnessed this last September when the college announced its learning and leadership initiative (pg. 16), a program that promotes day-one job readiness for our graduates through self-awareness, industry internships, and international experiences. Through the generosity of alumni Ken and Sue Christianson and industry partner CoBank, and with the support of our national board of advisors, the vision for a new campus center to direct this initiative was born.

The recent groundbreaking for our new Wine Science Center in Richland (pg. 7) further demonstrates the possibilities presented when individuals coalesce around a big idea. Washington Governor Jay Inslee, along with WSU Regent and President of St. Michelle Wine Estates Ted Baseler, WSU Chancellor Keith Moo-Young, as well as CAHNRS’ own Director of Viticulture and Enology Thomas Henick-Kling and many generous donors and alumni, heralded the groundbreaking as the next major step in WSU’s continued leadership and support for the growth of Washington’s $8.6 billion wine industry. It is expected to help triple the value of this industry by 2020. With more than 148 students currently enrolled in WSU’s Viticulture and Enology program, the research and teaching conducted in the Wine Science Center will address the specific opportunities and challenges faced by winegrape growers and wine makers in our state.

CAHNRS Cougs continue to achieve world-class excellence, but it’s only possible because our alumni and friends see a need and step up to fill it. I invite you to explore this issue of ReConnect, taking note of how our students, faculty, and alumni positively influence the world. I hope you’ll be inspired to step up and reconnect with us, other Cougs and the CAHNRS community—both world-class and worldwide.

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Look for the “ReConnect” button throughout this issue to discover links to online content and videos.
Facelift for Ferdinand’s

BY ANGELA LENSEN

ON SEPTEMBER 24 at Ferdinand’s Ice Cream Shoppe on the WSU campus, visitors were drawn into a juxtaposed environment of old and new. They came to celebrate 65 years of delicious dairy treats in an updated retail space.

The popular eatery was festively decorated for a birthday party and had vintage music playing from when its doors originally opened in 1948. Construction to enclose the outside patio started on February 25, and the last details were completed as university classes began in August. The remodel has improved customer flow and streamlined operations.

Beginning at Troy Hall in 1948, shifting to its current location in 1992, and now with more room to better serve its fans, Ferdinand’s is still one of WSU’s most desired destinations for young and old alike.

View the video tour of Ferdinand’s remodel vimeo.com/79834164.

Mary Jane Kreager, a visitor during the celebration, reminisced about the days in the late 1950s when she worked at the original Ferdinand’s location in Troy Hall. While working there, the secretarial studies major met her future husband, Paul Kreager, also a WSU student. The couple has lived in Pullman and frequented Ferdinand’s ever since.

Ferdinand’s celebrated its 65th Anniversary and Grand Re-Opening on September 24, 2013. A steady crowd came to see the newly remodeled store and enjoyed specials on ice cream cones and a limited release of Cracked Pepper & Chive cheese.

While the changes have updated the facility, the shop still feels familiar to its fans. It has kept the same great ice cream and cheese flavors, as well as the traditional décor that lies in the story of Ferdinand the Bull.
Humans and robots team up for a high-tech fruit harvest

BY SYLVIA KANTOR

WITH THE BUMPER CROP OF APPLES in 2013, many Washington tree fruit growers dream of a day when automated technology helps bring in the harvest. Manoj Karkee, assistant professor with the Center for Precision and Automated Agricultural Systems at Washington State University, believes that day will soon be here.

Karkee and his team of WSU scientists recently won a $548,000 U.S. Department of Agriculture grant to develop tree fruit harvesting technology where robots and humans work side by side.

“Due to the complexity of fruit identification in an orchard setting, collaboration between human and machine is very important. This is what’s unique,” Karkee said. “When the robot can’t deliver, humans will step in and vice versa.”

Growers keen on technology

The cost of seasonal labor is increasing and the availability of a semi-skilled labor force continues to become more uncertain. But will growers embrace robotic fruit harvesting?

“Growers are very, very interested in this technology and enthusiastically waiting for it,” Karkee said. “In three to five years we hope to have a prototype to demo in the field, and in another five years be able to point to where growers can adopt the technology.”

When apples are in clusters or obscured by leaves and branches, a robot requires complex algorithms and long computational time to identify them. Humans, on the other hand, can very quickly identify fruits in these situations.

When the two work together in a mobile system in the field, the fruit is identified in real time faster than by human or machine alone.

Karkee will develop specialized robotic methods to harvest fruit with consideration for things like the delicacy of the fruit and the dynamics of picking fruit by hand.

Materials, method mimic human hand

To develop a prototype, Karkee and his team, which includes Karen Lewis, Changki Mo, and Qin Zhang, will determine how best to detach fruit from the tree. Pull? Rotate? Combined twist and pull? The researchers will study growth patterns of various types of apples. They will record and analyze videos of hand motions taken during manual picking as well as analyze force and pressure data recorded by sensors placed on the hand.

This knowledge will be transferred to a robotic hand for a highly efficient fruit removal system. A complimentary project directed by Karkee will identify materials that best mimic the human hand in order to create a robotic hand that won’t damage fruit.

Funding for the research was awarded through the National Robotics Initiative, a joint program of the National Science Foundation, USDA National Institute for Food and Agriculture, National Institutes of Health and National Aeronautics and Space Administration.
CAHNRS Fall Festival scholarship winners

Sara Adams
Freshman, Ag and Food Systems

Why did you choose WSU?
My ultimate goal was to become a veterinarian so I chose WSU, of course! My backup plan was to be an Ag Ed major, and again WSU has a very well-renowned Ag program!

What do you love most about being a CAHNRS Coug?
All through high school I was heavily involved in Ag programs and I loved everything about it, so upon moving here I found a great Ag program again and was so thrilled.

What would be your dream job?
I want to be an agriculture teacher.

What was your favorite part of Fall Festival?
I was heavily involved in my career path. I am a member of the Block & Bridle club and have made many friends through it.

Anything else you’d like to add?
I can’t thank CAHNRS senators, ambassadors, and everyone that helps put on the Fall Festival enough! It was such a blast meeting other kids in the school and checking out the other clubs’ booths and games. I would also like to thank everyone who donated to the scholarship.

Taylor Esvelt
Junior, Animal Sciences

Why did you choose WSU?
I chose WSU because it has one of the top veterinary schools in the country, which is what I’ll be applying for. Plus my dad is a Coug alum!

Sean McCotter
Graduate Student, Entomology

Why did you choose WSU?
I chose WSU because I had a great internship experience here. While attending Bellevue College, I took courses offered by the Community College Genomics Initiative (COMGEN) which was partially supervised by several WSU professors/USDA employees. USDA and NSF jointly funded COMGEN and helped fund a summer internship for me in the WSU Department of Plant Pathology, studying speciation in morel mushrooms in the Pacific Northwest. I enjoyed the work a lot, so when I heard an assistantship was open in Dr. Lori Carris’ lab, I jumped at the opportunity.

What do you love most about being a CAHNRS Coug?
I am a member of the Block & Bridle club and have made many friends through it.

What would be your dream job?
I love being around animals, raising them, watching them grow, and nursing them back to health, so I would like to be a large animal vet or an animal nutritionist helping keep animals healthy.

Anything else you’d like to add?
I’m very much enjoying the warm and friendly atmosphere and the cooperation between the students and faculty.

Robert Zinna
Graduate Student, Entomology

Why did you choose WSU?
I chose WSU because of the research opportunities it offers, as well as the change of pace. I came originally from South Carolina, so moving all the way to Washington State was a huge change, as well as being the farthest I have ever been from home. Studying entomology under Dr. Laura Lavine is another reason I’m here.

What do you love most about being a CAHNRS Coug?
It’s learning about the different ways people interact with agriculture, as well as the sense of camaraderie our entire college has.

What would be your dream job?
My dream job is to be a research professor at an institution similar to WSU. I love teaching!

Are you working on any research projects?
My current research project with Dr. Lavine involves investigating the genetic mechanisms behind the giant head horns in Japanese rhinoceros beetles. I want to know what genes make a horn grow, and how those genes have evolved over time, as well as how these horns grow in response to nutrition.

Anything else you’d like to add?
I love being around animals, raising them, watching them grow, and nursing them back to health, so I would like to be a large animal vet or an animal nutritionist helping keep animals healthy.

CAHNRS awarded four $1,000 scholarships through a random drawing at Fall Festival. All that was required to enter was an application.
Teen supports honey bee research

BY KATE WILHITE

AT JUST 16 YEARS OLD, Sheridan Miller is already a veteran fundraiser. The Mill Valley, Calif., teenager recently donated $1,400 she raised to help support Washington State University’s honey bee stock improvement program. Over the past six years, she has raised more than $5,000 to help fund research aimed at combating colony collapse disorder (CCD) and saving the honey bee.

Miller first became interested in honey bees when she was 10. She heard her mom talking about how bees were disappearing and became concerned.

“I remember being incredibly worried, because she said most ice cream flavors would be gone, along with the bees,” said Miller, referring to the vital role bees play in agriculture through the pollination of about 100 crops, including strawberries, raspberries, blueberries, cherries, pears, apples, cranberries, and almonds.

Miller began studying honey bees and CCD and what she learned was far more disturbing than the disappearance of ice cream flavors, she said.

Miller began studying honey bees and CCD and what she learned was far more disturbing than the disappearance of ice cream flavors, she said.

She held her first fundraiser at age 10 and has made donations to help fund bee research every year since. This year, Miller organized and hosted a lecture for local honey bee enthusiasts and concerned citizens. The featured speaker was Sue Cobey, a WSU bee breeder-geneticist who Miller supported previously at the University of California, Davis.

At the event, Miller sold handmade beeswax candles, booklets about honey bees, and raffle tickets for a donated gift basket.

“Sheridan cares so much about people and the earth,” said her father. “We are amazed at her energy level and the fact that, instead of burning out, she seems to be getting even more committed to her efforts. She often tells us of her next idea where she hopes to raise even more money than the last time.”

What advice does Miller have for others who are concerned about problems in the world?

“Honestly, and I know this sounds cliché, but every little bit counts,” she said. “CCD is an incredibly terrifying prospect... but it will only continue to keep getting worse if we just sit on the sidelines and let it happen.

“I have only made a tiny impact,” she said, “but if everyone made just as tiny an impact with this, or with other huge issues in the world, we would have 7 billion people making a gigantic impact—together.”

SAVING HONEY BEES

BY BOB HOFFMANN

HONEY BEES face a lot of challenges, according to WSU Professor of Entomology Steve Sheppard. Invasive mites can sap a brood’s strength and bring in viruses. Pesticides can build up in the brood comb and weaken the bees. And, while the agricultural practice of monoculture provides a lot of food for people, it offers little of the nutritional variety that bees need. Some of these threats alone may weaken or kill a hive, but a combination of factors is thought to be the cause of colony collapse disorder, in which worker bees abruptly disappear and the entire hive is doomed.

Plant and animal breeders seek resistant specimens to selectively breed, incorporating their resistance into the overall population. But U.S. entomologists have to work with a limited honey bee gene pool because of a 1922 import ban on live honey bees to restrict a concurrent influx of mites and viruses that threaten native bee populations.

In an effort to find the needed genes, the USDA granted WSU a permit in 2008 to import honey bee semen for breeding purposes, subject to strict inspection. The imported semen is tested for viruses, and queen bees inseminated with the approved semen can then be released to bee producers.

While semen extraction and insemination of honey bees is known technology, preservation of the semen has always been a challenge. But Sheppard’s graduate student Brandon Hopkins discovered that liquid nitrogen maintains the semen viability for decades, helping preserve imperiled subspecies through a genetic repository.

To learn more about honey bee research at WSU, visit entomology.wsu.edu/apis/.

Sheppard and Sue Cobey discuss the challenges facing honey bees in a video at youtu.be/Lm2kibnKynU.
We’ve all heard that milk is a good source of protein and calcium, but it turns out that even the fat in milk is good for us, as a source of omega-3 fatty acids. And, while dairy products in general provide heart-healthy fatty acids, organic whole milk provides significantly more.

A team of researchers, led by WSU researcher Dr. Charles Benbrook, conducted the first large-scale, U.S.-wide comparison of organic and conventional milk, and found that conventional milk had an average omega-6 to omega-3 fatty acid ratio of 5.8, more than twice that of organic milk’s ratio of 2.3. The higher the ratio of omega-6 to omega-3, the greater the associated health risks.

Consumption of more omega-6 than omega-3 fatty acids is a well-known risk factor for a variety of health problems, including cardiovascular disease, cancer, and autoimmune diseases. Western diets typically have ratios up to 15-to-1, while a ratio of 2.3-to-1 is thought to maximize heart health.

The researchers say the healthier ratio of fatty acids in organic milk is most likely due to the greater reliance on pasture and forage-based feeds on organic dairy farms.

The team also compared the fatty acids in dairy products to those in fish. Co-author and WSU research associate Donald R. Davis said, “We were surprised to find that full-fat milk products supply far more of the major omega-3 fatty acid, ALA, than recommended servings of fish.”

The study was published in the peer-reviewed scientific online journal PLOS ONE.
The CENTER of Washington Wine

BY KATE WILHITE
You don’t have to travel very far in the world of wine before you encounter the term *terroir*. It’s a French word with a complicated meaning that seeks to explain some of the mystery in every bottle of good wine. “It is a concept almost untranslatable, combining soil, weather, region and notions of authenticity, of genuineness and particularity—of roots, and home,” wrote Steven Erlanger in his recent New York Times article “Vive le Terroir.”

Terroir most commonly describes the combination of factors provided by Mother Nature that give a wine its character. It’s firmly rooted in the embodiment of a place. While these factors certainly play a big role in the development of a wine’s flavors and aromas, there is a more recent, local ingredient helping Washington winemakers create distinctive wines: science.

“Terroir does not just happen,” said Thomas Henick-Kling, director of the WSU Viticulture and Enology program. “Some people think you just find this special place, plant some grapevines, and you get great wine.” The best vineyard sites won’t produce great wine without the knowledge of expert growers, winemakers, and researchers, added Henick-Kling.

The new WSU Wine Science Center (WSC) under construction in Richland is poised to blend the advantages of Washington’s varied terroir, including those of the state’s thirteen American Viticultural Areas, with the research and teaching expertise of Washington State University to support the state’s rapidly growing wine industry.

While efforts to raise the final $4 million needed to complete the facility are still underway, the project broke ground in September 2013 and is expected to be complete in early 2015.

**Research and teaching in the heart of Washington wine country**

The WSC will be housed in a 39,300-square-foot LEED-certified (Leadership in Energy and Environmental Design) facility on the WSU Tri-Cities campus. The $23 million center was designed with multiple functions in mind. There’s space for research, teaching, and outreach education. The building will feature a grand central lobby where visitors can meet and mingle while viewing the research, teaching, and winemaking in action. The facility will also house an extensive wine library including a collection of special wines from various regions of Washington.

The center will have specialized laboratories for wine sensory analysis, molecular biology, microbiology, and chemistry research, plus class-
wind deposited loess, and varied elevation—are different from most other wine regions around the world.

“Information from other universities won’t necessarily solve some of the problems we have here,” said Ted Baseler, president and CEO of Ste. Michelle Wine Estates, the largest producer of wines in Washington. “One of our challenges is winter damage—when vineyards get to minus 10 or 20 degrees. We need the science that will protect the vines and future fruit in our vineyards—and that’s where WSU comes in, in a very special way.”

At the same time, WSU research benefits the wine industry around the world. “A historic and important study was done at the Columbia Crest vineyard on irrigation,” said Baseler. “The result of that study by WSU has cut the use of water by about half.” He believes the research WSU conducts in collaboration with the wine industry will continue to provide benefits industry-wide. “It’s not just proprietary research by one producer,” said Baseler.

“The center will enable us to do the research necessary to keep this industry competitive, and it will help promote WSU’s V & E program, strengthening our international collaborations because we will actually have space to bring people to,” said Henick-Kling, who is already arranging research and study exchanges with universities in Switzerland and Germany, with plans to include universities in France, Italy, Australia, and South America. “It will be a place for industry, teaching, and research programs to interact.”

From good to great

The idea for the Wine Science Center evolved from a research needs analysis commissioned by the Washington wine industry in 2006. A gap analysis of current research capacity and needs outlined in the 2009 report identified the lack of certain infrastructure and research funding. While WSU’s Viticulture and Enology program has been contributing vital research to the industry for decades, the report concluded that the program would need to expand if it is to keep up with the projected growth of the industry.

“It was clear to industry leaders that we need an educated workforce, research solutions, and problem-solving—and to develop new opportunities locally in our vineyards and wineries,” said Henick-Kling.

Baseler sees the project as a natural evolution of the work already being done at WSU. As an early supporter of WSU’s wine research and teaching programs, Baseler worked to get funding for faculty and staff to help establish WSU’s Viticulture and Enology program. “Once we got the staffing, we knew that we needed a facility and that it had to be a state-of-the-art wine science center.

“The reason for the center is quite simple—every great wine region in the world has a cornerstone research and teaching university that supports the wine industry,” said Baseler, who is chairing the fundraising efforts for the WSC.

A perfect pairing, plus one

WSU teamed up with the wine industry and local community in the Tri-Cities to develop the center with an efficiency none of the stakeholders could have achieved on their own. “Perhaps it’s because of the relative newness of this wine growing area and fast growth of the industry that people get along here very well,” said Baseler. “We have huge collaborative efforts between research, growers and wineries. Everybody is working together to make this a great wine region.”

The City of Richland joined the effort by creating the Wine Science Center Public Development Authority to oversee and manage the design and construction of the facility, and to ensure compliance with state restrictions on publicly funded projects that partner with private enterprise. The 3.5-acre parcel of land for the WSC is currently owned by the Port of Benson, but will be donated to WSU upon completion of the construction.

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Science and Sensibility: Jim Holmes

1982: IN A SUBURBAN GARAGE in West Richland, hobby winemakers Jim Holmes and John Williams stand behind folding tables pouring samples of their recent vintages. Despite the exceptional quality of their product, it’s been difficult moving their wine into the regional supply chain, making wine tastings in this no-frills location a common occurrence. This scene provides new perspective on the high-tech garage start-ups of the 80s and 90s, but 30 years later, the outcome of Holmes’ and Williams’ venture is just as impressive as that of Apple or Amazon.

Jim Holmes, the retired owner of Ciel du Cheval Vineyards, is a legend in the Washington wine industry as the first to plant grapes on Red Mountain in the Yakima Valley. Today, the region is covered with vineyards making the most of the high pH soil and low-rainfall climate that stimulate vines into producing highly coveted winegrapes. But in the 1970s nobody, including Holmes, knew that you could have a successful vineyard operation in the region.

Holmes entered the wine industry in 1972 in what he describes as a “serendipitous” move. Looking at his success, however, it’s clear that timing, persistence, and learning—both on the job and from others versed in the science of growing grapes—outweighed mere good fortune. “John and I had just made an unsuccessful run at the stock market,” recounts Holmes. “With some money still on hand, my friend and I thought that it would be good to invest in real estate. Richland and Yakima were growing rapidly, and we figured that the land between them would be worth something, so we bought 80 acres from the father of a friend.” That land was purchased for close to $16,000 in an area that now sells for $40,000 per acre.

“We had no idea what to do with the land, until we came across a report by Doctor Walter Clore from [WSU].” That report made a strong case for the region being ideally suited for growing grapes. While Holmes had toured Europe and enjoyed many local and foreign wines, he knew nothing about growing winegrapes. Nevertheless, he and his partner decided to give it a go. Holmes didn’t quit his day job, but he spent nearly all of his spare time tending his vineyard. “We had to learn about irrigation, pruning, and everything else that it takes to grow grapes,” he said. “We had to dig a well, and we consulted with others on how to plant.” Their first harvest revealed how little they knew. “Early on, I thought that we could transport our grapes in a pickup and sell them to home winemakers in Seattle. I didn’t realize how much 10 acres of grapes would weigh.” The weight of that harvest—close to 80,000 pounds—forced them to rethink their approach.

In the early days, Holmes struck a deal with a regional winemaker to purchase their crop, but because there was little brand value for Washington grapes, the sale price was low. “We knew that our grapes were worth more than what we were being offered, so we started making our own wine.” The move towards vertical integration meant that Holmes also became the lead salesman for the operation. Holmes worked with a small Seattle startup wine distributor to get things going in the city as well as in the local market.

Successful local distribution reinforced what Holmes knew all along: he had an exceptional product and it wouldn’t be long before others realized the potential of the area and competition rolled in. Holmes and Williams were hauling their product to Seattle, selling directly to restaurants and businesses that were interested in local wines. Demand was on the rise and they recognized the need to acquire more land, develop partnerships with the wineries
that now coveted their grapes, and shift from a hobby to full-time work. At that point, Holmes and Williams amicably split and Holmes began to focus on growing “new and adventurous varieties.” He has since settled on three broad types of grapes—Bordeaux, Rhone, and Italian—that he believes are ideal for the region.

After more than four decades as a leader in Washington’s wine industry, Holmes’ recipe for success was simple. “Every time we encountered a roadblock, we just did what seemed to be the sensible thing to do.” That sensibility is based on more than intuition, and Holmes credits WSU for contributions to the industry, including Clore’s groundbreaking report.

While Holmes frequently refers to the “art” of grape growing, he recognizes the science that informed his techniques and decisions. “Research at [WSU] showed that we were over-watering and not stressing the vines. Growers now irrigate with much less water, which preserves this natural resource.” Holmes also praises WSU for another major contribution that not only saved his grapes, but the health of his employees: “Cutworms were climbing up and attacking the buds on our vines.” Growers would spray their entire plants with pesticide. “WSU research determined that if we just sprayed the base of the vines, the larvae wouldn’t climb [past that].”

Holmes has become an ardent supporter of WSU and its research in viticulture and enology. His support, and the support of others like him, are making WSU projects like the WSU Wine Science Center possible. And Washington wine, Holmes’ wine, is no longer being tasted and peddled solely in a local garage—it’s gained international recognition, thanks to both science and sensibility.

“Three years ago it was an idea with no money. Now, we are just a year away from having a completed project,” said Gary Ballew, economic development manager for the City of Richland. “That [timing] has been amazing.”

The WSC is another example of the passion of the Washington wine industry, according to Henick-Kling. “Things move incredibly fast here—the center is an example,” he said. “When we do research, much of it is conducted in commercial vineyards and in consultation with the industry, so when they see something working they just pick it up. They don’t even have to wait for us to publish our research. If it works, it works.”

Early financial support for the project came from Washington’s grape growers and winemakers in the form of a $7.4 million donation from the Washington Wine Commission, the state organization that promotes awareness of the Washington State wine industry in the US and internationally. “The Wine Science Center symbolizes the power of partnerships and the commitment by those in our great state who want to see us become a leader on the global stage,” said Steve Warner, president of the Washington State Wine Commission. “We’re the second-largest wine producing state in the country, and our wines consistently receive critical acclaim. The Wine Science Center represents a solid investment in our future.”

A great year for Washington

WSU’s Wine Science Center will be essential to helping the Washington wine industry reach its goal of tripling its economic impact from $8.6 billion to $20 billion by 2020. It will also generate many other benefits for local communities and students.

“Until the mid-90s people didn’t come [to the Tri-Cities] voluntarily, they came for jobs,” said Ballew. He credits the wine industry for bringing positive change to the area. “The wine industry not only changed the perception of our community from the outside but from inside as well. We started thinking of ourselves differently. It has brought in art, entertainment, and dining opportunities that we otherwise wouldn’t have had.”

“The Wine Science Center will put students in the heart of Washington wine country,” said Kari VanBeek, a viticulturist at Ste. Michelle Wine Estates and 2006 graduate of WSU’s Viticulture and Enology program. “Students will be able to get involved in the industry even while they take classes.

Ted Baseler sums it up this way, “I am very confident that with the distinct terroir and talent we have in this state plus the addition of the Wine Science Center, we will, no doubt, in ten years be considered one of the top three places to grow grapes and make wine in the world.”
Introducing the first WSU student-made wine label

BY RACHEL WEBBER

Pour a glass of riesling from the tall, sleek green bottle labeled Blended Learning, and out comes not only a unique blend of white wine grapes from the Yakima Valley, but the story of six WSU students finding opportunity and education in the heart of Washington wine country.

Robb Zimmel, a senior in the WSU Viticulture and Enology program, was working as a life-flight paramedic in Portland when he discovered an interest in fermentation science and decided to move to Tri-Cities with his wife and children, two years ago. Now in his final year at WSU, when he talks about winemaking, he waxes poetic.

“It’s that pinnacle moment,” he says. “After the grapes have been crushed, the soak is done, the yeast is ready, and you’re waiting to see if the fermentation will take off like a freight train or be sluggish...it’s that next day when you come into the winery. There is an intoxicating wine smell, and you’re just hoping and praying that the fermentation is working, and you’re waiting for the sugars to drop...from that point forward the birth of your wine begins and you watch it all the way through to its maturity, and guide it.”

Zimmel and five fellow students began planning for what would be the first WSU student-made wine back in spring 2012 when the project was launched by Viticulture and Enology Program Director Thomas Henick-Kling. With support and mentorship from professors Henick-Kling and Bhaskar Bondada and from Charlie Hoppes at Fidelitas winery in Richland, they chose their grape varieties, harvested, crushed, barreled, and, in the summer of 2013, bottled their finished product. They worked with Noir Designs to develop a marketable label design and released 100 cases of the Riesling in Fall 2013 through Wine By Cougars.

Student winemakers Dane Day and Joel Perez began the Riesling project during their first semester in the program, along with Zimmel, Colin Hickey, Garrett Grover, and Lora Morgan. Going into their final semesters of the program last summer, Day and Perez began pouring at wine shows and tastings, shaking hands with alumni and buyers, and developing an online presence to promote the wine. Meanwhile, they had another premium wine project underway. Two Cabernet Sauvignon wines are currently in the works at Bernard Griffin winery in Richland, Perez said.

“The ability to ask questions and soak up knowledge on a regular basis is fantastic and the Griffins make very good wine,” said Perez. “Luckily for us, what we are learning in the classes. The two work in concert with each other.”

Launching a Legacy

Some of the student winemakers have graduated since the launch of the Riesling, but while finishing up the program, Zimmel has already begun to develop his own label in partnership with Fidelitas and support from Hillary Sjolund in her winery laboratory, Enomama, he said. Perez and Day are heading into their final semesters with what Perez describes as an “enormity” of options and connections within the wine industry. But their wine certainly won’t be the last of the student-made wines coming from the WSU V & E program.

Les Walker graduated from WSU in 1984 with a degree in geology and returned to WSU Tri-Cities two years ago looking to make a career change. Along with Jeff Thompson and fellow student Dave Balsz, they began harvesting Chenin Blanc grapes and Barbera grapes last fall. In spring 2014, the Chenin Blanc will be ready to bottle.

This spring, when the bustling atmosphere in the wineries has settled down, the students will discuss the design for their label and take the next steps in marketing their product. With a vision of creating a series of wines from the V & E program, the group is already helping establish a new tradition of blended learning—bringing together students, alumni, winemakers, growers, and wine enthusiasts to uncork the possibilities.

WSU Blended Learning is available at the new Brelsford WSU Visitor Center (visitor.wsu.edu) and at WSU Connections in Seattle (washingtonstateconnections.com).
The WSU Department of Apparel, Merchandising, Design, and Textiles (AMDT) is embracing the idea of change. It has already experienced one major alteration—an energetic new department chair, Joan Ellis—but more adjustments are planned. We sat down with Ellis to uncover the inspiration behind the apparel program and the impact it is having on the future leaders of the textile and apparel industry.

“Fashions change, but change is always the fashion.”

—Anonymous
Once you get to know Ellis, you understand the movement underway in the department. Ellis’ energy for all things apparel fuels her progressive ideas for the department, a full teaching load, and her involvement in several national conferences. Surprisingly, Ellis hails from a region known for a different pace of life, where fashion is trumped by function, where “Rodeo Drive” is less “drive” and more bronco riding and barrel racing.

Raised in Billings, Montana, Ellis took a back door into the clothing industry. When she was a teenager and in need of a part-time job, her father encouraged her to apply for a job at Big Bear Sports Center. “I blame my dad for all of this,” jokes Ellis.

Ellis, a sports and outdoor recreation enthusiast, followed her dad’s advice. She started as a cashier, worked her way up to salesperson, and then designed window displays for the entire store. She eventually got to know all facets of the business.

This experience led Ellis to enroll in the Merchandising program at Colorado State University where she earned a bachelor’s and master’s. For her thesis, Ellis joined forces with Bruce Klepper, who owned Advanced Retail Management. Her expertise not only landed her a graduate degree but a job with the company. With travel for the job taking its toll, one of her mentors from CSU, Antigone Kotsiopulos, enticed her into pursuing a Ph.D. with a full-ride scholarship. That doctorate was in organizational development and focused on managing positive change.

Changing Images

As the fashion industry has grown, with the help of popular TV programs like Project Runway and America’s Next Top Model, the AMDT program has grown too. In the last decade, enrollment has risen from 50 to 267 students. While the AMDT program has been riding the trend, Ellis recognizes that the department needs to branch out into new markets. Ellis is drawing on her experience with active apparel, with the goal of connecting her physically active customers (students) with the regional outdoor industry.

“We have a large [active wear] market sector. When people think of the northwest, they think ‘outdoors and activities.’ A large group of retailers have corporate headquarters in the region: Outdoor Research, Eddie Bauer, REI, Filson, Helly Hansen, Nike, Adidas, Columbia, and Brooks are just a few,” she said.

Ellis recognizes that a large portion of prospective students will always want to connect with the traditional fashion industry—after all, Nordstrom is headquartered in Washington State, too. However, she sees shifting the department’s offerings to include more outdoor apparel as a strategy for regional and national growth. “Of all the programs across the United States, nobody else has this focus. It’s silly of us not to take advantage of it,” she said.

A new AMDT marketing campaign, set to unveil this spring, takes a bold and unique approach to showcasing both the region and the program. In addition to traditional fashion photos, something new will catch your eye: mannequins in outdoor wear and set in scenic outdoor locations, interacting with live student models. The juxtaposition says: our program is where fashion meets the outdoor world.

Major Location Alterations

In addition to new leadership, AMDT will soon have a new home. The Johnson Hall annex is currently being renovated for the new tenants. When talking about relocating, Ellis gets very excited. “Getting into a new space for our department is a big deal, a VERY big deal.” AMDT was “temporarily” moved to Kruegel Hall thirteen years ago. Kruegel Hall can best be described as beautiful on the inside. Despite the exceptional faculty and students who teach and learn there, the space is woefully lacking in aesthetics.

When fully renovated, the annex will offer space that finally reflects the excellence of the program, and, for the first time in the department’s history, the faculty will be located together. The updated facility will feature a conference room with video capabilities, an illustration and rendering studio, and a 100-seat classroom equipped for distance learning opportunities and industry-led seminars. There will also be three studio spaces: a large visual merchandising studio, an advanced design studio, and a studio for introduction to apparel design and product development. A new gallery—in a strategic intersection for catching foot traffic—will showcase student work.

Reshaping the Student

Beyond the new exteriors on both the building and the brand, the most notable change in AMDT is the development of the students. Like many other departments in CAHNRS, AMDT is focusing on preparing students to be job-ready the day they graduate. To achieve this, Ellis and other AMDT faculty continually network with industry members to create invaluable student interactions with professionals. “We had 100 students at Nordstrom [last fall] and they rocked it,” said Ellis. “Nordstrom was blown away—they had no idea that our students were so interested in what they do.”

Ellis sees that there is often a misunderstanding about the career opportunities in the apparel industry.
Watch the interview with Joan Ellis online. We also visit “Flirt,” a boutique clothing store in downtown Pullman to talk about fashion and merchandising. cahnrs.wsu.edu/threadsofchange

“When high school students think about apparel and merchandising, they think: fashion, magazines, and shopping,” she said. “Their vision is limited until they learn about trend forecasting, market intelligence, consumer behavior studies, consumer insight studies, textile chemistry, color science, product development, international sourcing, compliance, and global trade...it goes on and on.”

New AMDT students often quickly become excited about the vast array of possibilities. “I had previously worked in clothing retail and wanted to make a career out of it,” said Kelsey Fletcher, a senior from Bellevue. “Going into school, I had my heart set on being a buyer for a large department store. Now I know of so many other career paths that don’t all involve direct contact with clothing.”

Jacob Zottoli, a junior studying design and merchandising, left business studies when he saw all the options available to him in AMDT. “I’ve had my own clothing line since I was a freshman in high school, but I didn’t realize everything that went into this industry until I started exploring this program,” he said.

Retooling the Industry

While Ellis entered education because she wanted to teach about her passion, she recognizes that the industry needs to focus on more than highly visible brand labels and built-in obsolescence. There is a big push at the corporate level and within the university to look at sustainability in the industry, including fair labor, social responsibility, and economic development in third world countries, said Ellis. “We want our students to be more socially, environmentally, and economically responsible.”

Ellis references the tragic collapse of a clothing factory in Bangladesh last spring that killed more than 1,000 people and drew little reaction from both the apparel industry and consumers. “Generally, the tragedy went unnoticed. It’s quite sad,” she said.

Fortunately, Ellis has the energy to tackle the problem head-on. “Effecting change is easier from within. So it’s my hope that our students will enter the workforce with the intent of effecting positive change,” she said. And with the changes that Ellis is modeling and leading, this isn’t out of reach.

WSU Tartan merchandise

Amdt has developed and registered an official WSU Tartan. Profits from the sales of WSU Tartan merchandise support AMDT students. The product line includes a scarf—made in Scotland—as well as neckties, tote bags, t-shirts, lanyards, and wine bags. You can even get a custom kilt!

To view or purchase current Tartan products, visit cahnrs.wsu.edu/tartan.
FOR JENICA HAGLER, a visual learner, sitting in a classroom and listening to a lecture is sometimes challenging. A CAHNRS study-abroad trip to Brazil introduced her to a new way of learning that she describes as empowering.

“Reading books and memorizing facts gave me the educational background,” she said, “but actually experiencing and living the education cannot be matched in a classroom.” Hagler, who is a sophomore at WSU in Agricultural and Food Business Economics, returned from the two-week experience with a greater knowledge of Brazilian agriculture. Perhaps more importantly, she also came away with a new appreciation for hands-on learning, a new interest in exploring cultural differences, and new views of the world and herself.

A new CAHNRS program is designed to provide more students like Hagler with exceptional learning experiences that teach skills they will use for the rest of their lives. The proposed Center for Transformational Learning and Leadership (CTLL) will serve as the gateway to CAHNRS. It is a point of access for bringing the industry into direct contact with students and for moving learning out of the traditional classroom through mentored internships, immersion-based international experiences, peer mentoring, networking, service learning, leadership development, and life skill enhancement.

Making the Connection

The CTLL is an early outcome of a collaboration between CAHNRS leadership and the National Board of Advisors (NBOA). Created in the fall of 2012, the NBOA enables the college to take advantage of the expertise, vision, and passion of more than 100 industry representatives from various disciplines. At the same time, board members can participate in the development of programs that will benefit their businesses.

“These stakeholders and supporters are helping us make our academic programs, extension work, and research efforts relevant,” said Kim Kidwell, executive associate dean of CAHNRS, and the driving force behind the CTLL. “In the past, we’ve been short-sighted about harnessing the expertise, power, and potential of this group to enrich the learning experience of our students.”

At the NBOA meeting in Seattle last March, board members expressed the need for increasing student confidence by teaching skills for navigating conflict, working in teams, and problem solving. They see the CTLL as a way of achieving these goals as well as an avenue for connecting students and industry.

Creating Opportunities

Based on these insights, and building upon the solid academic foundation that a CAHNRS education provides, the CTLL brings together students, stakeholders, and industry. “As a college, our wheelhouse is providing a rich, relevant academic experience. Most of us aren’t experts in running a business, teaching high school, or marketing products in the real world,” said Kidwell. “If we want to prepare our students for success, we need to build portals for essential, beyond-the-classroom learning with our industry partners.”

Mentored internships are one of the ways the CTLL will connect students and industry. “We don’t just give employers a to-do list to execute as part of the internship process,” said Kidwell. “We ask them to introduce students to diverse aspects of the industry. As a mentor, you are passing the torch for your discipline to the next generation.”
The CTLL will also be an incubator for study-abroad experiences. In the past few years, CAHNRS has hosted several highly successful international learning experiences in locations like Rwanda, Malawi, and Brazil. Students want these opportunities to continue.

“I can’t imagine graduating from college without stepping out of my comfort zone at least once or twice,” Hagler said. “With as much time and effort that students dedicate to their classroom education, I believe that it is important to also immerse ourselves in an experience that reaches deeper and extends beyond the typical classroom in order to fully prepare ourselves for life after graduation.”

Kidwell hopes to use the lessons learned from these excursions to encourage and facilitate travel experiences in every department in the college. “We are working out the mechanics of the international learning experience so it won’t be difficult for others to execute,” said Kidwell. The next trip is organized for a group of animal science students to learn first-hand about how their discipline is applied in China, during the summer of 2014.

Along with immersing students in the industry, the CTLL will bring the industry to students through career networking and advising events, and panel and roundtable discussions with industry experts.

Realizing Our Purpose

The CTLL also offers leadership development and life-skill enhancement for all “students.”

“We use the term ‘student’ more broadly than some people do,” said Mary Kay Patton, clinical assistant professor in CAHNRS and founding member of the CTLL team. “We aren’t just talking about the people who are paying tuition and sitting in our classes; we are talking about all people as lifelong learners.”

The first of these offerings includes an online Tidal Leadership Certificate program (see ad, right) and an annual women’s leadership symposium (story, pg. 18). Other learning opportunities are in development, including life-skill enhancement workshops, peer-mentoring programs, and customized leadership training programs for businesses and civic groups.

Expanding Our Potential

The work of the CTLL is just beginning. It is a big idea that has moved quickly from inspiration to execution. While its current location is virtual, the goal is to house the CTLL in a physical location that truly becomes the gateway to CAHNRS.

“Sometimes when you are trying to find your way around WSU, you can get lost in the largeness of it, whether it is the human scope, the bureaucracy, or just knowing where you need to go,” said Patton. “We want to make it easy for the student who wants to apply what they are learning to an international experience, or for someone from industry to hire an intern.”

The CTLL will help provide students with the skills and experience they need to be able to step into lead positions upon graduating, said Jim Fitzgerald, executive director of the Far West Agribusiness Association and NBOA member. “Students should consider it ‘the edge’ they are looking for in a competitive world,” he said.

While the CTLL is designed to be self-sustaining operationally, it is building an endowment to fund student scholarships, internships, and other learning activities. The CTLL has received more than $1 million in support pledges.

To learn more visit ctllew.letters.cahnrs.wsu.edu/leadership.

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Kim Kidwell, PhD, Director, CTLL
Women’s Tidal Leadership
BUILDING THE VILLAGE

BY RACHEL WEBBER

INSPIRING, CONNECTED, AND RECHARGED—just a few of the words women from more than one hundred different walks of life used to describe their experience at the first WSU Women’s Transformational Leadership Symposium last fall.

In a day devoted to equipping women with tools and strategies to successfully lead in their homes, communities, and workplaces, participants from ages 19 to 94 came together to share and learn with one another. “It takes a village,” said event moderator Kim Kidwell, associate dean of academic programs and director of the proposed Center for Transformational Learning and Leadership. “We are the village.”

Tapping into values
Kidwell, along with her friend and colleague, Human Development Instructor Mary Kay Patton kicked off the event by asking the women to think about what brought them to the symposium. Faculty, students, community members from near and far, and alumni worked together to build a list of words often associated with leaders. The discussion continued with identifying, reflecting, and targeting individual values and understanding their influences on decision-making. Participants also had the opportunity to pair off for a one-on-one exchange about values, and then discuss what they learned within small groups.

Keynote direction
WSU alumna Colleen Nolan (’82, Animal Sci.), the CAHNRS 2013 Women’s Professional and Academic Leadership honoree and dean of the School of Natural Sciences and Mathematics at Shepherd University, gave the keynote address on women from the past, present, and future. She explored how leadership is framed in different organizations, and the importance of supporting, mentoring, and connecting with women on their journeys to becoming influential leaders.

“Go out, find that advocate. Find that mentor,” she said. “Be proactive and seek them out.”

Nolan also explored women’s leadership in higher education, pointing out the high percentage of women in their 60s who are presidents at colleges and universities will result in a high turnover in the next few years. One of the challenges is not having women in the pipeline to fill those roles, she said.

“We are making progress,” she said. “It’s slow, but we are making progress.”

Bringing generations together
Where does that progress come from? How do we bring women into positions of leadership? Part of it will take building bridges across generations, said moderators and Human Development Instructors Abbie DeMeerleer and Anna Whitehall, who led the afternoon sessions. Participants looked at both different and shared values across generations and discussed how building supportive communities can start conversations across age boundaries.

While women left the symposium with unique, transformational ways to integrate the skills they learned into their lives, they also took away small inspirational cards with words of encouragement designed by CAHNRS student leaders.

The symposium was facilitated by the Center for Transformational Learning and Leadership.
Donors support transformational opportunities for students

The proposed WSU Center for Transformational Learning and Leadership (CTLL) could not have been launched without the support of two generous alumni and a corporate partner, CoBank. These major donors are extraordinarily committed to helping prepare students for success.

Ken & Sue Christianson: The gift of alums

Ken (’74, Agron.) and Sue (’76, Food Sci. & Technol.) Christianson are as dedicated as alumni get. After graduating from WSU, they did two things right away—marry and purchase a WSU Alumni Association lifetime membership. “We could hardly afford our rent, but we paid for that membership,” Sue recalls with a smile.

Through the years, the Christiansons have supported WSU and CAHNRS programs not only financially, but also by giving of their time, energy, and expertise. The Christiansons now serve on CAHNRS’ National Board of Advisors. They participated in early discussions about the CTLL and later made a generous donation that was essential to launching the program.

The Christiansons own and manage Chrishaven Trees, a wholesale nursery in Burlington, Washington. Prior to that, they ran the company started by Ken’s great-grandfather in 1926, Alf Christianson Seed Company, an international seed producer and distributor. That experience helped foster their interest in international learning and development. Their son Eric (’12, Field Crop Mgmt.) had the opportunity to experience hands-on international learning when he was in CAHNRS. The trip to Gashora, Rwanda, that Eric participated in created a new model for CTLL experiences.

“It was a real eye-opener,” said Sue, describing the effect the trip had on her son. “It was truly a multidimensional learning experience. [Students] learned how to brainstorm effectively and to solve problems in new ways. And, they got to create something really positive.”

“Experience is a big factor, irrespective of the field,” said Ken, adding that it’s not just about study abroad. The experience needs to be hands-on. “Our agriculture industry is huge internationally, so I want students to get experience with it as part of their education.”

Ken and Sue “see a strong enterprise and leadership in CAHNRS” and want that positive reach to continue. “We hope our story inspires others to give.”

CoBank: An opportunity to give back

CoBank has its roots in rural America. As a provider of banking and financial services for U.S. agribusiness, rural power, water, and communications, the company is giving back to the industries and communities it serves through donations to land-grant universities. CoBank recently announced the creation of a $5 million fund to support agricultural research and education at more than 30 of these public institutions. The CTLL is among the programs to benefit.

CoBank views its support of agricultural research and education as a corporate responsibility, said Chuck Olsen, lead relationship manager in CoBank’s Agribusiness Banking Group. He added that the company recognizes how much it relies on research institutions like WSU to develop new technologies and plant varieties that continue to improve the agriculture industry.

CoBank also recognizes the value represented by CAHNRS students. When they heard about the CTLL, the company decided that the program would be a great one to support.

“It’s not just about the dollar donation,” Olsen said, referring to CoBank’s participation in mentored internships and other training facilitated by the CTLL.

“What you do with your profits is a huge part of who you are as a company and as people,” Olsen concluded.

To learn how you can help support the CTLL, visit ctll.cahnrs.wsu.edu.
In the next several decades, the human story is going to be a water story, Sandra Postel told a packed house at the WSU Compton Union Building auditorium during the 2013 Lane Family Lecture. “But the narrative of that story is still being written,” she added. “It’s being revised every day by the choices we make about how we use and manage and value and think about freshwater.”

Despite fears of flooding that imply excess, less than one percent of the Earth’s total supply of water can sustain life. Postel, a National Geographic Society freshwater fellow and director of the Global Water Policy Project, introduced the topic of water scarcity with a look at how much the critical resource is embedded in our daily lives. For example, it takes 700 gallons of water to make a cotton T-shirt, and 600 for a typical feedlot-produced hamburger.

“Everything we buy and use and eat takes water to make,” she said. Since the 1960s, groundwater depletion rates have nearly doubled, leading Postel to believe that water will be to the twenty-first century what oil was to the twentieth century. “So what do we do?” she asked the audience of nearly 500 in attendance and live-streaming.

Postel has been working on a few ideas. She explained how taking steps to slow the pace of climate change, population growth, and consumption can help provide enough freshwater to sustain both humans and ecosystems. As part of the “Change the Course” campaign with National Geographic, she helped develop a water footprint calculator people can use to measure consumption and contribute to conservation.

“We are all in this pond; we are all in this finite water supply together,” Postel reminded those at the lecture. “Figuring out solutions that can work for everyone and sharing those is hugely important.”
Ellen Preece prepares a mussel sample for testing in the lab.

The Natural Resource Conservation Endowment Fund was established by Jane P. Conrad and entrusted to Washington State University in 1982. The purpose is to provide seed money for domestic and international research and projects related to energy, conservation, small-scale agricultural concepts, community education, natural resources, and wildlife. Supported work is oriented toward practical application of theory to provide stakeholders with maximized opportunities to benefit.

Ellen Preece wants to know if microcystins, liver-damaging toxins produced by algal blooms in freshwater lakes, accumulate in Puget Sound seafood. Thanks in part to a grant from the Natural Resource Conservation Endowment Fund and a number of other like-minded sources, she’s not the only one who will soon find out.

Preece, a doctoral student in the WSU School of the Environment (SoE), is helping the Washington Department of Health determine whether seafood accumulates enough microcystins to be a health concern for populations who rely on locally harvested seafood for food.

Microcystins are a group of amino acids produced by cyanobacteria (blue-green algae) that thrive in freshwater lakes with high water temperatures and excess nutrients such as nitrogen and phosphorous. The problems have been traced to sewage, fertilizer, detergent, and animal waste. Previously found only in freshwater lakes, microcystins are now showing up in saltwater.

Applying Lessons Learned

News that recent sea otter fatalities on the California coast have been attributed to microcystins coming from freshwater lakes alerted regional scientists to the possibility that the same toxins could show up in Puget Sound shellfish.

“The Washington Department of Health is very interested in understanding this potential exposure pathway,” said Joan Hardy, a toxicologist with the agency. Lakes in Kitsap and Pierce Counties are suspected contributors to the growing risk.

Recent immigrants (often from Asia) regularly depend on shellfish they harvest from the shores of Puget Sound as a protein source. A USGS Western Ecological Research Center study suggests that consuming saltwater shellfish harvested near river mouths could pose a risk to people because of the freshwater toxins.

Preece is also investigating microcystins on the Colville Indian Reservation, where tribal members fish for rainbow trout in lakes with poor water quality.

A Matter of Detection

Preece’s research focuses on refining methods for detecting microcystins in seafood. Using mussels collected from Puget Sound, she is developing protocols for a technique that can determine which variants of the microcystins are present at what concentrations. She is also developing standard methods for health agencies to use a more common, less expensive tool to screen for microcystins in fish and shellfish.

Both techniques provide information that is critical for assessing whether seafood poses a potential health risk. “We’re counting on Ellen’s interest in the analytical issues associated with this problem so that the Department of Health can give sound advice to the public,” Hardy said.

According to Preece, if a changing climate results in higher lake temperatures, we could see increases in these toxic algal blooms in freshwater lakes. Hardy agrees that climate change may be at play and that monitoring is warranted. “We’re really just beginning to look at climate change and whether it’s a factor in freshwater toxic algal blooms. We need to carefully monitor lakes over time to see if there is a trend in toxicity linked to changing temperatures or other environmental factors.”

Fuel for the Findings

Preece conducts her research in the limnology lab of Dr. Barry Moore in the WSU SoE. In addition to support from the Natural Resource Conservation Endowment Fund, she has also received an EPA STAR graduate fellowship. Other related partnerships are with the Washington Department of Ecology, departments of health in Kitsap and Pierce Counties, the King County Environmental Laboratory, and the Colville Confederated Tribes. Preece expects to complete her doctoral program in 2014.

The Natural Resource Conservation Endowment Fund was established by Jane P. Conrad and entrusted to Washington State University in 1982. The purpose is to provide seed money for domestic and international research and projects related to energy, conservation, small-scale agricultural concepts, community education, natural resources, and wildlife. Supported work is oriented toward practical application of theory to provide stakeholders with maximized opportunities to benefit.
COLIN CAMPBELL (’95, Crop & Soil Sci.) stood at the edge of a flooded rice paddy in the Japanese village of Itate, surveying a landscape contaminated with radioactive isotopes following the meltdown of the Fukushima Daiichi Nuclear Power Plant in 2011. As part of an ambitious and innovative experiment to remove Cesium-137 from the soil, he brought a tool created more than 6,000 miles away at Decagon Devices in Pullman.

Applied Innovation

Decagon Devices was founded in 1983 by Gaylon Campbell (’68, Ph.D., Crop & Soil Sci.), Colin’s father. The elder Campbell started working for WSU shortly after graduation. During the research portion of his job, Gaylon often found he needed to build his own instruments. His breakthrough product was the outcome of a quest to measure moisture in soil and the recognition that a current technology could be adapted to meet his goal. By constructing a miniature version of a thermocouple psychrometer, then used to measure air humidity, Gaylon got the results he was after. Colleagues heard about his ingenuity and asked him to build the devices for them, too. When he couldn’t keep up with demand, he asked his children to help, which supported their college educations and formed the basis for Decagon Devices. Even today, Decagon is very much a family operation, although the employee count has grown to about a hundred.

The Tradition of Teaching Science

Gaylon also loved teaching. One of his favorite WSU classes was Environmental Biophysics, which studies the exchange of heat, water, carbon dioxide, and “everything that’s important for keeping us alive,” said Gaylon. The class starts with the fundamental principles of heat exchange in plants, animals, and humans in their environment, and extends into the complexities of climate science.

The mix of students from across campus required constant classroom innovation but provided endless opportunities to experiment. “We had kids from all of the sciences,” he recalled. One zoology student asked if it was possible to measure water loss from a snake. When Gaylon said yes, he removed a slithering serpent from his shirt, sending a number of students bolting for the door. Despite the panic, the measurement was successful, and likely a first in herpetological studies.
Education and Decagon

“Education is one of the core principles on which Decagon operates,” Colin explained in his office at Decagon headquarters in Pullman. The room, strewn with note pads, magazines, and spiky sensor prototypes, is well suited to the vice president of research and development. Like his father, Colin also enjoyed teaching Environmental Biophysics at WSU, a class he had taken from Gaylon years earlier. After leaving Decagon in 1995 to pursue a doctorate at Texas A&M, Colin returned to Pullman and began teaching at WSU part-time. The company donated both his time and that of Doug Cobos, the director of research and development at Decagon, so WSU students could benefit from their knowledge and experience at no cost to the university.

The Campbells’ devotion to educating young scientists extends beyond the classroom. Decagon sponsors an in-house internship program, where students not only assist the company with its research and development, but also work on their own projects. One student developed a device for measuring water infiltration into soil to get a more accurate calculation for runoff. By focusing on water potential, the new measurement tool indicates the energy state of water in soil, which determines how strongly the water binds to the soil. This project could have far-reaching effects on water and soil conservation.

An ongoing collaboration between Decagon and WSU’s R.J. Cook Agronomy Farm has also produced long-range impacts. Decagon and sister company Campbell Scientific provided instrumentation and a central data collection system to track water and fertilizer movement across the farm without invasive core tests. An M.S. student working under Colin handled the data processing. WSU leveraged the combined contribution to obtain an additional $4.6 million in grants for research into improving the efficiency of nitrogen and water inputs through site-specific management, also known as precision agriculture. “By reducing the amount of nitrogen escaping into the water and air, we reduce pollution while helping farmers optimize yield and improve profits,” explained David Brown, associate professor in the Department of Crop and Soil Sciences.

The latest contribution from the Campbell family is an endowed professorship in environmental biophysics provided to the Department of Crop and Soil Science. It builds upon Gaylon’s legacy of research and teaching to develop and refine models of water, gas, and energy fluxes in the soil-plant-atmosphere continuum, with a focus on agriculture and other managed ecosystems.

Seeking Scientific Solutions

Back on the banks of the Japanese rice paddy, holding a Decagon data logger connected to a Geiger counter, Colin was also thinking about the 71-year-old farmer who owns the land and the farmer’s 93-year-old mother. How they desperately want to return to their land and lifestyle, but can’t while the land is saturated with Cesium-137. While the Japanese government has tried to remediate some farmland by removing the top 10 centimeters of soil, the technique has robbed the land of its fertility. On this farm, researchers are testing a novel approach of flooding the land and creating a slurry with the topsoil. Cesium binds to the light clay particles, leaving the heavier sand particles to settle. When the water is drained from the paddy, it should take the light clay and cesium with it. Decagon has contributed multiple tools that monitor the process. Preliminary results show that this approach yields a significant reduction in contamination, though more testing is needed.

“Science can have the answers to current and future problems.” Although these are the words of Gaylon, the sentiment is applied by the entire Campbell family, as well as scores of students and faculty at WSU.
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Meridith (class of 2032) shows off her latest tattoo. She is the youngest daughter of Dan Kenney (’01, Mech. Eng.) and Veronica (Paul) Kenney (4-H; ’05, Mech. Eng.).
1960s
Gail L. Cramer (’63, Ag. Econ.) recently received the WSU Alumni Association’s Alumni Achievement Award for contributions to agricultural policy, research and global agribusiness. As a visiting professor at Harvard in 1992, he founded the International Agribusiness Management Association. He’s been head of Louisiana State University’s Department of Agricultural Economics and Agribusiness since 2000. In 2007, Cramer, his wife, and family established the Gail L. Cramer and Marilyn J. Karlenberg Cramer Endowed Scholarship at WSU.

1980s
Bill Marler (’82, Political Sci., Eng., Econ., with honors) was included on The Daily Meal’s list of “America’s 50 Most Powerful People in Food” for 2013. He joins the ranks of the nation’s top chefs, writers, food industry leaders, and activists. Marler, a food safety advocate, has a law practice in Seattle and represents clients from around the country, especially victims of foodborne illness.

2000s
Michelle Widner (’02, Interior Design) has joined Bernardo Wills Architects as an interior designer. Her initial projects include the Newtech Skill Center and Werschler Dermatology office renovation and addition, both in Spokane. Since graduating, Widner has earned the National Council for Interior Design Qualification certificate. She is a member of the International Interior Design Association and Advisory Board for the WSU Interior Design program.

1970s
Russ Salvadalena (’77, Food Science & Tech.) (above), has managed the WSU Creamery for the past 13 years and calls it his “dream job,” including working with the student employees and “fantastic facilities.” He appreciates work by Marc Bates and Dr. Lloyd Luedecke who built the Creamery into a self-sustaining operation.

2010s
Lyliana Gayoso (’11, Applied Econ.) is currently writing her doctoral dissertation at WSU, working in economics, with an emphasis in labor economics and econometrics.

Ashley Miller (’06, AMDT) is now one of two handbag/accessory buyers on the shoes/handbag team at Amazon.com. She began as a member of Amazon’s clothing team, buying Juniors, Women’s Active, and Women’s Accessories. She previously worked at Nordstrom, in both the buying offices and with their private label group, NPG. “I’m really interested in keeping in touch, knowing what’s going on within the college (specifically AMDT), and connecting with students about to graduate,” she says. “I’m looking for additional ways to support WSU and I’ve joined the Recent Graduates President’s Associates Committee.”

Kari VanBeek (’06, V & E) is working as a viticulturist for Ste. Michelle Wine Estates. She is responsible for just over 3000 acres of all varieties of winegrapes that go into most of the SMWE labels including Columbia Crest and Chateau Ste. Michelle. Her main task is crop estimating and quality control of fruit coming from contract growers. She also oversees one of the company-owned vineyards and makes recommendations such as fungicide spray programs.

Andrea Cox (Young) (’04, Ag. Com.) is enjoying her stay-at-home-mom status with her newborn daughter (and future Coug), Claire. Andrea’s husband, Ben Cox (’05, Ag. Econ.), is now a Senior Relationship Manager at Rabo Agrifinance in Richland.

Jennifer Frost (’06, Interior Design) has been promoted to principal of Rice Fergus Miller Architecture, where she has worked since graduating. Her design career is focused on healthcare, hospitality, and senior housing. Outside of her project work, Frost founded the firm’s university recruitment program, helped coordinate their professional development program, and stays involved with industry organizations throughout the Northwest. She was chosen for the 2013 International Interior Design Association Northern Pacific Chapter Recognition Award for her contributions and commitment to the industry.

Nik Grimm (’13, Ag. Ed.) (above) is the new recruitment and retention coordinator for CAHNRS. Accepting the position just four months after graduating, he is now responsible for coordinating recruitment and retention efforts across 15 academic departments and advising a team of 23 student ambassadors for the college. Prior to this, Nik worked as an assistant in the college’s Academic Programs office while earning his degree. The experience working with youth he gained in the Agricultural Education program helped make him a good candidate for the position. Outside of work, he is known as “a motorcycle-riding, banjo-playing, public speaking professional with an infectiously fun personality…”

Classmate Notes

Go Cougs!
Chef Callison’s recipes include many ingredients grown and produced by CAHNRS departments, such as Cougar Cheese and Ferdinand’s Ice Cream made at the WSU Creamery, Waqyu beef, fruit and vegetables from the Tukey Horticulture Orchard and Eggert Family Organic Farm, honey from the Department of Entomology, soft durum flour from the Wheat Research Center, and peas, lentils, and garbanzo beans from the USDA Grain Legume Genetics Physiology Laboratory.

“I know how fortunate I am to have an ‘edible backyard’ right on campus, elevating sustainability practices to a whole new level.”

—Executive Chef Jamie Callison, author of The Crimson Spoon: Plating Regional Cuisine on the Palouse